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CHINA'S BIG LEAP
IN WATER CONSERVANCY

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Foreword

Since the winter of 1957 a "big leap forward" has been achieved in China's agriculture, first of all, in the construction of rural water conservancy works. In the course of the "big leap forward" the peasants and cadres working in the countryside worked day and night in their fight against nature. It moves one even to listen to their slogans. Here are some of them: "A few years of hard work and ten thousand years of prosperity!" "Let the rivers stay out of our way and let the mountains bow to our might!" "No weather can be so cold as to freeze the fire of our heart, and no mountain can be so high that it cannot be climbed!"

All the peasants — men and women, old and young — are busy at work. They dig canals and repair dams; they level mountains to bring them under the plough; they change the nights into days, the moon into the sun and slack season into busy season. On the work sites are red flags everywhere in the daytime and lights everywhere at night. In work all vie with one another in fortitude and courage. It was with such a spirit that they scored marvellous achievements during the short period from October 1957 to April 1958. They expanded the area of China's irrigated land by 355 million *mou*,[1] a figure which surpasses by 80 million *mou* the total amount of increase in irrigated land during the past eight years and, by 110 million *mou* the total of irrigated land acquired during the past several thousand years. This shows the great courage and power of the Chinese people in their fight against nature after the victory of their socialist revolution.

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[1] A *mou* equals 1/6 acre or 1/15 hectare.

Oppressed and exploited by the feudal rulers, bureaucrat-capitalists and imperialists the peasants of old China were utterly powerless in the face of calamities such as floods and droughts. No matter how hard they worked they could hardly get a full meal with the little income left to them after the interminable list of taxes and land rent had been paid. Naturally they could not afford to build water conservancy works. Dams were uncared for and allowed to fall into disrepair. The rivers frequently overflowed and caused damage. Many kinds of structures and works broke down owing to prolonged neglect. As to serviceable reservoirs and canals, they were usually under the control of the landlords, and the peasants could have no access to them. In 1928 there was a great drought in north China and about 40 million peasants were affected. In many places even grass and wild vegetation were sought as food by the hungry peasants and labourers, many of whom starved to death. In 1931 there was a big flood in the middle and lower reaches of the Yangtse River. Forty per cent of Hunan, sixty per cent of Kiangsu and of Hupeh, thirty per cent of Kiangsi, and seventy per cent of Anhwei were inundated, 180,000 square kilometres of land being overwhelmed by the flood waters. The number of victims reached 25 million, of whom no less than

140,000 were drowned. It is easy to understand how the people who had experienced such tribulations yearned for emancipation from darkness and poverty; how they wished to break the fetters of imperialism, feudalism and bureaucrat-capitalism, so that they might fight victoriously against floods and droughts, struggle for big harvests, and create a happy life for themselves and their children.

In 1949 the people's democratic revolution led by the Communist Party ended in victory. Under the leadership of the Party the peasants rapidly carried out land reform. They abolished the feudal system of land ownership and thoroughly overthrew the foundation of the rule of feudalism, bureaucrat-capitalism and imperialism. Guided by the Party the peasants soon went on to the socialist path of agricultural co-operation. Experience taught them that they could no longer lead the life of individual peasants farming small plots of land; in that way they were still unable to escape exploitation by the rich peasants and speculators; unable to overcome natural calamities and make themselves rich and prosperous. The only way was to unite, work together, and adopt the method of co-operation. In 1955 a great socialist movement for the organization of agricultural producers' co-operatives was launched in the countryside. In January 1956 the Political Bureau of the Central Committee of the Chinese Communist Party published the draft National Programme for the Development of Agriculture, and subsequently led the peasants to work enthusiastically for increased production. From the winter of 1955 to the spring of 1956 the peasants brought an additional 130 million *mou* of land under irrigation, and gathered 50,000 million piculs[1] of manure of all descriptions. In 1956 the whole country was plagued by serious natural calamities. But there was no drop in farm production. On the contrary, grain production surpassed the preceding year, which was a year of good harvests, by 15,000 million catties,[2] an increase of 4.9 per cent. In some provinces, where the natural conditions are better than elsewhere, production of grain, cotton and oil-bearing crops in 1956 surpassed that of 1955 by over 10 per cent, and in certain counties the production of these crops surpassed that of the previous year by much more. Although the year 1956 was the first year of the wholesale agricultural co-operation in China, the superiority of the system of agricultural co-operation was already proved, and the important role played by the National Programme for the Development of Agriculture put forward by the Communist Party in giving inspiration to the peasants and pushing up production was also shown.

Needless to say, most of the agricultural producers' co-operatives, which were newly organized, had shortcomings and were not yet entirely consolidated. Thus in the latter half of 1956 and early part of 1957 certain problems arose. Some people doubted the superiority of agricultural co-operation. They also threw doubt on the National Programme and the government's policy of accelerated construction and achieving greater, quicker, better and more economical results. They exaggerated the individual mistakes in work. Accusing the co-operatives of "rashness" they greatly dampened the enthusiasm of the masses and affected the progress of agriculture in 1957. From the winter of 1956 to the spring of 1957 the area of irrigated land increased by only 36 million *mou* and only 40,000 million piculs of fertilizer was gathered. In 1957 the area of land planted to grain was 55 million *mou* less than that of 1956.

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[1] A picul equals 50 kg.

[2] A catty equals 1.1023 lbs. or 0.50 kg.

The Party made short shrift of this unwarranted accusation of "rashness." In September 1957 the Third Plenary Session of the Central Committee reiterated the policy of socialist construction, i.e. to achieve greater, quicker, better and more economical results. Subsequently it published a revised version of the National Programme. These steps, together with the anti-Rightist struggle and the nation-wide Rectification Campaign, heightened the spirit and initiative of the masses. In the course of the Rectification Campaign and anti-Rightist struggle the merits or demerits of the socialist and capitalist systems were debated. All erroneous ways of thinking reflecting the remnants of bourgeois ideology gradually disappeared and the communist spirit was much in the ascendant. Consequently the political consciousness and socialist initiative of the masses were greatly elevated. During the Rectification Campaign the masses criticized the shortcomings of the cadres. For their part the cadres criticized themselves and changed their style of work. This moved the masses and greatly increased their confidence in the leadership of the Party. At the same time the masses also saw their own shortcomings. They criticized themselves and corrected erroneous ways of thinking and backward habits inherited from the old society. As a result, both the cadres and the masses achieved mental contentment and ease of mind. Their thought was emancipated and initiative heightened; and their confidence in the high speed of socialist construction was strengthened. It was, in short, under such conditions that a greater upsurge in agricultural production, a "big leap forward" in the construction of rural water conservancy took place.

In guiding the peasants to make a "big leap forward" in water conservancy the Party put forward the over-all policy of achieving greater, quicker, better and more economical results. It also reviewed the experiences gained in water conservancy work in the past and advanced another policy of a more concrete nature, i.e. the policy of giving priority to water conservancy works of small size, those built by co-operatives, and those built for the purpose of water storage. In carrying out this correct policy of the Party the peasants showed great fortitude in their struggle and overcame countless difficulties. They invented thousand and one new methods and new tools; they split the mountains and tamed the floods; they made water flow uphill, dredged streams, and dammed rivers. In doing these things, innumerable heroes emerged who performed feats which are almost inconceivable. The great power of the emancipated working people gives inspiration to anyone who knows what they have done. Experience shows that if only we have faith in them and rely on them, there is nothing in the world we cannot do.

It is difficult to overestimate the significance of the "big leap forward" in rural water conservancy. Suffice it to say it has not only raised agricultural production and ensured good crops in 1958, but it has also pushed forward industrial development and accelerated the pace of socialist construction on all sides. The great influence of this "big leap forward" and the marvellous achievements scored under it have given inspiration to all the Chinese people as well as to the friends of the Chinese people. The Chinese people solemnly tell the whole world — not with words but with deeds — that they will go the socialist way, that they are through with imperialism. The Chinese people are confident that, with their own resources and labour, with help from countries of the Soviet-led socialist camp as well as all the peace-loving people of the world, they will be able to realize a bright and happy future.

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BUILDING A NEW WORLD

Sun Li

Beginning with the winter of 1957 Hsushui County, like all other places in China, launched a spectacular movement for a "big leap forward" in production. The movement had water conservancy as a central theme. Working on an unprecedented scale the people of Hsushui effected a radical change in the appearance of the county in a period of time covering only two seasons — winter and spring. They were confident that they could quadruple their grain production in 1958. They aimed at an average production of 2,000 catties a *mou* in 1958, a figure five times that of the revised National Programme for Agricultural Development, which is 400 catties a *mou*.

Hsushui County, Hopei Province, is situated east of the Taihang Mountains and west of Paiyangtien. It has an area of 762.5 square kilometres. Eight per cent of this area is mountainous; 12 per cent, hilly; 64 per cent, plain; and 16 per cent, lowland. The western part of the county is surrounded by mountains having 98 peaks. In the past, owing to the fact that there were few trees on these mountains and the slopes of the water courses had not been repaired for many years, the loss of water and soil every year was very great. Topographically, Hsushui is high in the west and low in the east. The

Tsaoho, Paoho and Pingho rivers, which flow through the county, all have narrow, shallow courses. In the past, whenever the rainfall was heavy they overflowed and caused damages. Thus a small amount of rain meant drought in the west, and a large rainfall meant flood in the east. Natural calamity had become a perennial affair. In 1954, for instance, the amount of rainfall was 1,320 mm. and 450,000 *mou* of land was waterlogged or close on one half of the county's total cultivated area of 860,000 *mou*. In 1955, rainfall was 864 mm. and the waterlogged land about 67,000 *mou*. In 1956, a rainfall of 864 mm. caused waterlogging on 270,000 *mou* of land. Altogether the loss of grain during these three years was 140 million catties. In 1957, the rainfall was only 390 mm. A drought resulted which affected 78,000 *mou* of land, causing production to drop by 32 million catties. Frequent visits of flood and drought made production exceedingly uneven. In 1952, a record year, farm production of the county averaged 286 catties a *mou*. In several successive years the average was below 241 catties a *mou*. Owing to the poor production of the past few years the county had not been able to meet the people's needs in grain. Between 1954 and the first half of 1957 the government sent 92.6 million catties of grain to the county to make up the deficiency. All this shows that the most important thing in the development of agricultural production in Hsushui was to conquer nature and change the natural conditions of the county, and water conservancy was the thing that would do this.

During the past few years, to avert damage caused by natural calamities the Party committee and government of Hsushui have repeatedly led the people to wage resolute struggles against floods and droughts and not a few achievements have been scored. In the autumn of 1957 the Party committee of Hsushui called on Party members and people of the whole county to make efforts to bring about a "big leap forward" in farm production. The cadres and people responded to the call with enthusiasm. They agreed that floods must be averted and the natural conditions of the county should be changed for the better. In November 1957, the people of the whole county made a study of the method by which the Mangho River of Honan was tamed. They began to have a clear idea of the policy they should follow in their work in water conservancy, and that was that most works should serve the purpose of water storage, should be small, and should be built by the co-operatives. In accordance with this policy the following slogan was put forward: "Build conservancy works simultaneously in the mountainous regions, plains and lowland, and wage a combined struggle against flood, waterlogging and drought!" It was the aim of the Hsushui people to impound all surface waters, dig out the sources of all springs, and pump up all accessible underground water, so as to bring all their land under irrigation.

The slogan was heartily supported by the cadres and peasants of the county who at once went into action with high spirits to build conservancy works of all kinds. As the movement went on, one wave of enthusiasm followed another. Everywhere in the county one heard the proud saying: "If the mind does not freeze neither will the earth." All the members of the co-operatives, men and women, worked as one to build water conservancy works and none was idle. Everywhere the land was a surging wave of people in the daytime and a sea of light at night. When the "Magic Bowl" Reservoir was being built in Tawangtien, Liu Pao-chi, secretary of the township Party committee, was the first man to jump into the icy cold water to work on the foundation of the dam. Members of the co-operatives persisted in their work through the wintry nights. A reservoir with a capacity of 250,000 cubic metres was built in a matter of a few days. Under the guidance of some male members, 400 women members of four co-operatives of Hsinglungchuang built the "Women's Reservoir" in three days. It can irrigate more than 300 *mou* of land. The "Red Scarf Reservoir" was built by 780 teachers and students in one day. It can irrigate more than 200 *mou* of land. "Husband and Wife Well," "Father and Son Well," and "Brothers' Well" are some of the fancy names given to works of a minor nature. Many difficulties, of course, arose in the course of the movement, but they were overcome, one after another. The peasants, for instance, had no technical knowledge. But they were good students and could learn things very quickly. Collective wisdom works wonders. Small training classes were opened and a technical force gradually grew up. With the exception of the Shihliushan Reservoir in the upper reaches of the Paoho River, which was designed by cadres of the provincial government, all the other works were designed by local cadres or by the masses themselves. The quality of their designing was on the whole good. None of their designs was found to be a failure. "This," the peasants said, "is what we call 'outsiders doing the work of insiders.' "

The purpose of building the water conservancy works had been clearly explained to the peasants at the very beginning. They all knew that the work was for their own good and for the good of posterity. They knew, therefore, that it was not right to ask for appropriations from the government and that they should count on their own efforts in building these projects. Subsidies were, however, received from the government with regard to a couple of medium reservoirs. As to all the other works, they were built at the expense of the co-ops. While at work they brought their own food and used their own tools. Whenever there was a shortage of material they would increase their investment in the co-operative, which would then buy for them. The outcome was that, in this period, over 80 per cent of the members made investment in their co-operative. Chin Shu-tsai and Wang Lan-hua, members of the Communist Youth League in Mengtsun Village, put the 30 yuan they had reserved for their wedding into the co-operative. "Water conservancy first and wedding next," they said. "We should do everything for the 'big leap forward.'" "Put the steel on the blade of the knife" — this was the slogan of the co-operatives. In other words, "use what you have"; "don't expend money unnecessarily." Only 29.3 yuan, for instance, was spent in building the "Magic Bowl" Reservoir. At the height of the movement lines dividing the co-operatives, townships, districts, even counties were obliterated, and members of the co-operatives helped one another regardless of their affiliations, fully displaying the communist spirit. The Hsushui peasants have also planned to build a big reservoir in the border area between Hsushui and Anhsin counties so that both may share the irrigation facilities of the project.

After a strenuous struggle from the winter of 1957 to the spring of 1958 the people of Hsushui radically changed the natural conditions of the county. This change implied first of all the taming of the county's three big rivers, i.e. the Tsaoho, Paoho and Pingho, thus freeing the Hsushui people of flood menace. Secondly, it meant the all-round conquest of 27 mountain peaks, preventing further loss of water and soil. In addition, 29,000 *mou* of terraced land was either newly opened or the terracing repaired in the mountainous regions, 7,400 wells were dug, and some 228 reservoirs built in the mountainous regions, rivers and plains. The combined capacity of these works was over 140 million cu. m. With the completion of these works the county is freed of the menace of natural calamities and assured in the future of good harvests even if there should be a flood like that of 1954 or a drought like that of 1957.

Here we shall briefly describe how the Tsaoho River was harnessed.

The Tsaoho River flows through Hsushui County for a distance of 40 *li*.[1] Hydrological records of 1954 show that the river's biggest volume of flow during flood seasons is 430 cu.m. per second. In the past, during rainy seasons, when torrents flowed down from the mountains the Tsaoho would overflow, and when there was no rainfall, the river would slow to a trickle. Now seven reservoirs have been built in the plains at Shihkochuang Village and other places. Also, nineteen medium and small reservoirs were built, in 1955 and 1956, in the mountainous regions at Mengtsun, Hsiangshan, and other places in the upper reaches of the river. These reservoirs have a total capacity of over 25 million cu.m. They can drain off a flow of more than 200 cu.m. per second. In flood diversion they can divert a flow of 140 cu.m. per second. Thus, even in a season of biggest flood, the river's volume of flow will not exceed 230 cu.m. per second. As the safe volume of flow is 290 cu.m. the danger of flood is now ended. Furthermore, the water impounded in the reservoirs can irrigate 70,000 *mou* of land.

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[1] A *li* is slightly more than one-third of a mile.

Let us see what has been done to the Paoho River! The Paoho River has a narrow course and steep incline; its waters flow rapidly. Its safe volume of flow has been set at 86 cu.m. per second. At flood the flow may reach 250 cu.m. per second. To harness it 37 small reservoirs have been built on its upper reaches and three in the plains along its course. These reservoirs can impound 18 million cu.m. of water and detain and impound a flow of 150 cu.m. per second. They ensure the safety of the lands on both sides of the river. To increase the utility of the Paoho River a medium reservoir with a capacity of 60 million cu.m. is being built at Shihliushan. When completed it can irrigate 280,000 *mou* of land and enable hydro-electric power stations to supply local industries with electricity.

The Pingho River has been tamed in a similar manner. With the taming of mountain torrents and these three rivers, Hsushui may be said to have realized its long-cherished dream of the conquest of nature.

One hundred seventy-two reservoirs have also been built in the plains of Hsushui. In those places the calamities of waterlogging, flood and drought frequently occurred. With the building of these reservoirs, all flood and other waters are impounded. Not only inundation is avoided but water for irrigation is provided. The total capacity of these reservoirs is 60 million cu.m. The disasters of flood and waterlogging are avoided on 400,000 *mou* of land and more than 100,000 *mou* of land is irrigated. The water in these reservoirs is shallow and can be easily managed. In the reservoirs where the impounding of water is seasonal, early-ripening and water-resistant crops can be planted. In the reservoirs where the water is permanent, reeds can be grown, lotus planted and fish bred. In addition, as the land in most of the temporary reservoirs is alkaline, the water will wash away their alkalinity and improve the fertility of their soil.

One of the great achievements of the Hsushui people is the formation of a complete irrigation system, thus enabling all the land of the county to be irrigated. Surface waters in the county can irrigate 273,000 *mou* of land. When the Shihliushan Reservoir is completed, 410,000 *mou* of land will be irrigated. The reservoirs and other works are connected by 154 canals with a total length of 350 *li*. Thus all the rivers, reservoirs, pools and ponds of the county are linked and form one single system. Through this system, the volume of water of the rivers, reservoirs, pools and ponds is regulated and the rivers, when in spate, prevented from doing mischief.

In places where surface water is insufficient the peasants draw on underground sources. During the past four months some 4,000 wells with brick or stone shafts have been dug, as well as 2,600 wells sunk whose water is lifted by mechanical devices. In addition, 1,000 power-driven pumps have been acquired. At present not only is all the land of Hsushui irrigated, but irrigation has in the main been mechanized.

The change in natural conditions gave encouragement to the peasants and strengthened their confidence in the "big leap forward" in production. The targets of their increased production have been repeatedly overfulfilled. Originally their target was only 300 catties a *mou* but they soon raised it to 400. Then they made their target 2,000 catties a *mou.* Throughout Hsushui the movement for increased production was intense, and the peasants were confident they would fulfil their revised target.

In a short period of time Hsushui, a county which was frequently plagued by flood and drought, has built up a water conservancy system and radically changed its natural conditions. How was this possible? The answer is as follows:

1. *Rousing the masses to action.* That Hsushui succeeded in building up a water conservancy system in a short period of time was because its people were roused to action and adhered to the policy of building, in the main, works for the storage of water, works on a small scale, and works under popular sponsorship. In the past, their attention was focussed on the draining of water and they relied on the government for the building of big reservoirs. In the words of Chang Kuo-chung, first secretary of the county Party committee, "In trying to chase the shadow of big water conservancy works we lost the reality of smaller ones." The more they drained the waters the greater were the floods and also their difficulties. When the policy of the Central Government was seen to be right and submitted to the masses for discussion, it was widely welcomed and supported. After the county Party committee put forward the slogan: "Build conservancy works simultaneously in the

mountainous regions, plains and lowland, and wage a combined struggle against flood, waterlogging and drought!" it immediately became the masses' guide to action and led to an unprecedented high tide of water conservancy construction. During the high tide the masses displayed great initiative and originality. They gained rich experience in building water conservancy works, especially those in the plains. Through "grape" and "stars" system of reservoirs (so termed because of their particular design: the one like a cluster of grapes, the other like a spread of stars) and the construction and restoration of ponds they impounded the flood and rain waters. They adopted the method of linking the reservoirs as well as the canals, and a network of canals took the place of a network of ditches. Thus a complete water storage and irrigation system was built up. With the use of artesian wells, springs and wells whose water was lifted by mechanical devices, irrigation by canals and irrigation by wells were co-ordinated and surface and underground waters used in combination. In this way old sources of disaster became sources of benefit. Drought and waterlogging were no longer feared and good harvests were ensured no matter what happened.

2. *Regulating water in the plains.* Through experience, the Hsushui peasants found the right method of regulating water in the plains. By the "grape" method reservoirs are built along the banks of the rivers; and "stars" reservoirs are built in the broad plains. With the network of small reservoirs as a basis, medium reservoirs are built in appropriate places as centres of the system. The important works and the works in general are thus co-ordinated, forming a strong bulwark against flood and drought. Water regulation in the

plains has many advantages over the method of relying on big reservoirs alone, building dams across wide rivers, diverting floods by districts, and draining rainwater by ditches. Both money and labour are saved by using this method. All the land of Hsushui became irrigated land in only four months' time. There is no doubt that this method of water regulation, evolved in the course of carrying out the Central Government's policy of water conservancy, is the right method. In building reservoirs in the plains the Hsushui people made use of salt and alkaline land, lowland, old pools and ponds, dried-up river-beds, and old embankments. Owing to topographical advantages and the utilization of old structures the building of these reservoirs was done with a manpower averaging only 14 or 15 workers per *mou*. Not only floods and waterlogging are avoided but irrigation is developed. Although the reservoirs occupy some of the farmland, that does not mean that the land they occupy is entirely non-productive. In fact, many kinds of water-resistant and aquatic crops can be planted in these reservoir areas and they can also be used for other purposes such as raising fish, etc. The medium reservoirs were built in much the same manner. The medium reservoir of Shihkochuang, for example, has a capacity of 11.5 million cu.m. and can irrigate 70,000 *mou* of land. But it took only nine days to build, the number of man-days being 336,000 and the amount of money spent negligible. The water conservancy works of Hsushui not only free the county of natural calamities but provide irrigational facilities. They help to solve the problem of water conservancy in the plains. Their construction entirely conforms to the principles of socialist construction, i.e. to achieve greater, quicker, better and more economical results.

3. *The sources of water supply.* In building water conservancy works the Hsushui people relied mainly on surface waters and springs as sources of water supply for use in irrigation. Ordinarily there are two methods of obtaining water: sinking wells and digging canals. The water of wells come from underground sources and that of canals from the rivers. With regard to the problem of the sources of water supply, the Hsushui people, drawing on their past experiences, decided on obtaining water mainly from surface and underground sources. To get surface waters for use the people of Hsushui built a large number of reservoirs, ponds and tanks, thus impounding the water on the surface of the ground and using it for irrigation. In this way the menace of floods and waterlogging could be avoided. Besides, the work was more economical. The Hsushui people also used to a great extent the water of artesian wells. Artesian wells are variables in water supply. But their water, no matter its quantity, is a useful addition. A third source of supply is underground water. This is used to make up whatever deficiency there might be in the supply of surface water. In short the Hsushui people's idea of sources may be summed up in these two phrases: "Surface and artesian water" and "well water for double assurance."

4. *Collectivism.* In the past, when water conservancy works were to be built, labour, material, and funds were demanded from the people in accordance with the amount of benefit they were to receive from the projected works. This principle holds good under ordinary conditions. But the Hsushui people wanted to rid their county for good,

in one year's time, of big floods like the one of 1956 and severe drought like that of 1957. A different principle was, therefore, required. Accordingly, a plan was drawn up for water conservancy for the whole county. Labour power was put under unified control and work was done according to schedule. To carry out these steps the cadres and masses of the county had to be educated in the socialist spirit first, and departmentalism had to be wiped out. Political education was accordingly given and the plan to rid the county of natural calamities and irrigate its land was submitted to the peasants for discussion. The pros and cons were laid before the people and cadres so that everybody could easily judge of the advantages and the disadvantages. Enthusiasm was soon aroused. Take the Shihkochuang reservoir for instance. It has a capacity of over 10 million cu.m. and required some 360,000 man-days for its construction. It could not be built by Shihkochuang alone. The county government, therefore, launched a propaganda movement in the villages around the site and in the lower reaches of the river. It told the people of these places that when the reservoir was completed it would not only rid the villages around the reservoir of the calamity of waterlogging on 30,000 *mou* of land but would reduce flood menace in the lower reaches of the river. Besides, the people living in the lower reaches could irrigate their land with the water of the reservoir. In this way many people, who originally thought that the Shihkochuang reservoir was nobody's business but that of the Shihkochuang villagers, saw that it concerned the welfare of a much wider circle. Thereupon, they took an active part in its construction. It was originally planned to get 10,000 workers from 12 townships to do the work. Actually 16,000 workers from 17 townships took part, and it was completed in only nine days. Almost all the comparatively large reservoirs of the county were built with the combined manpower of a number of townships. The building of reservoirs gave the cadres and people of the county much practical education in the communist spirit.

"MAGIC BOWL" RESERVOIR

Early in December 1957 a man was frequently seen walking around the border of a basin-like area northeast of Tawangtien Village. Sometimes he would stand on a height and looked around; sometimes he would go down to the lower part and examine its topography. Sometimes he would pace the region as if measuring its length and breadth; sometimes he would bow his head, evidently absorbed in thought. One saw him talking with old peasants in the streets and in their homes, inquiring regarding the conditions of the basin-like region. He was like an inquisitive child, putting all sorts of questions to the old peasants. Who was he? He was Liu Pao-chi, secretary of the township Party committee of Tawangtien in Hsushui County. To find a site for a storage reservoir he not only made many investigations and inquiries but spent many sleepless nights.

In November 1957 at a meeting of the secretaries of township Party committees, the county Party committee made an appeal for the energetic construction of water conservancy works and for a "big leap forward" in agricultural production. This was a stupendous task. When Liu Pao-chi told the members of the Party committee of

"Magic Bowl" Reservoir

A modern pump simplifies the work of irrigation

How happy he is to see the endless stream of water flow around the cabbage field!

his township what they had to do, they began to make an analysis of the local conditions. Tawangtien is situated in a place where the plains and mountains meet. The topography of the township is unfavourable for the conservation of water and drought was frequent in the past. To avoid the calamity of drought a huge amount of water was required. But although Tawangtien was rich in water resources, having many rivulets and streams, the water flowed away without ever being utilized. The people's thoughts naturally turned to the conservation of the water of the streams and the prevention of floods in the lower reaches during flood seasons. As the flood seasons were usually very short the main problem for them was how to conserve water and utilize it. The best method of water conservation was of course to build reservoirs. But reservoirs built in the mountains held only comparatively small amounts of water and, being far away from the fields, were inconvenient for use. Could reservoirs be built in the plains? This might be a clue to the solution of the problem. But building reservoirs in the plains was a new idea to the villagers. After due deliberation Liu Pao-chi and other comrades were entrusted with the task of building a reservoir near the Chushui River north of Tawangtien Village as an experiment.

When Liu Pao-chi was told of his task of directing the work he felt greatly excited. To him, taking part in a great struggle against nature was both an honour and a responsibility. He was glad of the honour but awed by the responsibility as he had little knowledge of such work. But was he disheartened? Not at all! He was confident that so long as he was willing to learn there was nothing in the world he could not master. "Walking makes roads," he thought. He began to study the problem of a site. He made a thorough investigation of the conditions of the basin-like area and discussed the matter with old peasants and some Party members. Finally he decided that this area was perfect for the building of a reservoir as it was situated in the middle reaches of the Chushui River and had been a place for receiving water before. Although he did not know surveying he could judge by his eyes that, with a dyke built around the area, it could hold enough water for the irrigation of 2,000 *mou* of land. Having made up his mind he talked with the Party branch of the village on the problem of manpower and the speedy organization of a labour force for construction.

HANDS CAN PERFORM MIRACLES

A meeting of the members of the co-operatives was held. During the meeting the members expressed their joy at the prospect of being able to avoid natural calamities and increase production. But though most people agreed to the project there were dissentients. A debate, centring on two problems, consequently ensued. The first problem was the wisdom of the undertaking. Those opposing the project, the conservatives, were represented by Ho Chih-po and other upper-middle peasants. They said that the magnitude of the project was unprecedented, and that it should not be lightly undertaken. Some of them were the lazy type who did not relish the idea of hard work. This latter attitude was criticized by most of the co-op members.

"Although the project is a big one," said Tang Chun-po, a poor peasant, "most of the work is merely earthwork. It's an easy job and everybody can do it. Besides, one doesn't have to go very far for earth. So if only we're willing to build the reservoir it's almost sure that it can be built."

"Building reservoirs," said Ho Sheng-ting, another peasant, "means a blessing. Everyone, therefore, should give it his hearty support. Cautiousness is good, but let's not have too much of it. You folk are always complaining about low production but you're unwilling to work hard. How, I ask, can you get high production if you're lazy?"

After having heatedly discussed the problem, those who doubted the feasibility of the project and those who were afraid of work admitted that they were wrong and gave their word that they would co-operate. But here another question arose: Who was to finance the project? Some of those present said that building the reservoir was a big undertaking requiring a huge sum of money and that the government should be approached for an appropriation. To support their case they cited a precedent of 1955. During that time three reservoirs were built. Although they were much smaller than this one the whole expenditure was shouldered by the government. There was no reason, they argued, why the project under consideration should be an exception.

This attitude, also, was criticized by most of the co-op members. "In 1955," they said, "the people were still uninformed with regard to the benefits of reservoirs. It was to enlighten the masses that the government chose a number of places and built reservoirs. We should thank the government for its consideration. We have no reason to rely on the government for everything, and it's an act of ingratitude if we abuse the kindness of the government and make it an excuse for our irresponsibility." The cogency of this argument was evident to everybody, and those who argued for government financial support abandoned their attitude.

RACING WITH TIME

When enough work had been done with regard to ideological education Liu Pao-chi helped the Party branch of Tawangtien and the management committee of the co-operative to draw up a plan for the building of the reservoir. By that time the ground was already freezing. Action must be immediate, otherwise a much greater number of workers would be required and the quality of work also would be affected. It was therefore decided that a number of people would immediately prepare the foundation of the main dam and earthwork would be done later. The work of preparation was entrusted by the Party branch and co-operative management to Tang Ke-chien, the village head, and Ho Shang-chung, manager of the credit co-operative. Tang was a demobilized soldier who had had a great deal of experience in fighting and Ho was a young man full of energy. These two men were never known to have retreated before difficulties. They gladly accepted the task.

A race with time began. It was nightfall and the moon was shining. Several people were seen moving around in the "basin." They were Liu Pao-chi, Tang Ke-chien, Liu Teh-chang and Liu Yung. They had to complete the surveying of the reservoir site before daybreak, otherwise work would be delayed. They had no scientific instruments. This, however, did not make them lose heart for they were familiar with almost every inch of ground. With their eyes as a gauge, they surveyed all the heights and depressions and all the places most suitable for building a dam. When any one of them was not quite sure of his judgement he would ask the others to check it. By the time the stars were disappearing the surveying work was done.

Next morning the workers who were to make preparations for the main dam came to the site. Walking in front of them were Tang Ke-chien and Ho Shang-chung. Like Liu Pao-chi they, too, felt it a great honour to be an advance party in a struggle against nature for the creation of a happy life for the people. They had no illusion about the difficulty of their task. They knew it was going to be a hard struggle. For the site of the main dam was in the middle of the river which had already frozen. Water flowed beneath the ice and there was mud of an unknown depth. The water and mud must be cleared off and a solid base reached before the dam could be built. Their task was an urgent one. So as soon as they got to the site of the main dam they began to dredge the mud and water with willow buckets. Unfortunately the water came from strong-flowing springs and it maintained its flow as dredging went on. They toiled until late in the afternoon and there was still no sight to the end of their work. At dusk Liu Pao-chi came. When he heard what had happened he told the men to stick to their job. Then the buckets went up and down with increased speed. The dredgers kept on the fight against the mud and water throughout the night, and nobody knew how many buckets of mud and water had been drawn. It was a cold night aggravated by icy blasts, but the workers defied the weather and worked with unflagging zeal, their bodies wet with sweat. But water kept gushing from the springs, of which there were four. At daybreak there was still no sign of a big depletion in the amount of water and mud.

A little while later Liu Pao-chi and some other comrades arrived. Liu's eyes were red; obviously he had not had enough sleep. Then the people assigned to do earthwork began to arrive. Liu Pao-chi was greatly troubled. Looking at Tang Ke-chien and Ho Shang-chung he said: "It seems to me that working up here on the bank will never do. This is a critical moment and it is a test of our courage. We cannot let our work be held up."

Tang and Ho knew what he meant. "If the work must be done in the river, let us go down," they said.

When the co-op members heard that they must work in the water some of them became hesitant. Just at this psychologically important moment Tang Ke-chien, Ho Shang-chung and Tien Chen-fang, a cadre of the township, jumped into the water, so, too, did Liu Pao-chi. They began to work and dredge the mud and water which was a metre or more in depth.

"The cadres of the township and co-operative have gone down from the banks to work in the river," cried the people standing on the banks, "and how about us? Even Secretary Liu, who has not been well these days, has gone into the water. Is our health so frail that we must stay out of it?"

Then members of the Party and the Youth League as well as the shock workers all followed suit and ran down. One of the young men who had a sore on his leg was about to jump into the water but was pulled back. The river was now crowded with people working with all kinds of tools. At first water kept pace with the baling.

But several hours later the baling won and solid earth began to appear. The co-op members were wild with joy. One of the young men hurried to dump earth and stone on the exposed ground. "I fully understand why you are so impatient to get the earthwork started," said Liu Pao-chi, "but, remember — quality first!" The young man felt rather abashed and resumed digging. After a layer of black earth had been removed a solid base appeared. The preparatory work for the dam was completed. The workers breathed a deep sigh of relief and went back to get themselves ready for the next day's struggle which was going to be a still harder one.

IF THE MIND DOES NOT FREEZE NEITHER WILL THE EARTH

The work of building the dam began. Hundreds of co-op members, who had been hoping to see the calamities of flood and drought averted, took part in the work. The peasants of Tashihchuang, a neighbouring village, also came to help. Liu Po-chi and the cadres of the township and co-operative made the construction site their office. They came to the site every day just like the ordinary co-op members and worked together with them. Wherever the work was heavy Liu was surely to be present, and so were all the other cadres of the township and co-operative. At the end of the day they left the site only after all the co-op members had done so. When they saw that the latter had their meals sent to the site, they had theirs sent, too. Their revolutionary spirit was an inspiration to the co-op members; the people were welded together like one in their fight against nature. The sound of tampers thundered on the site the whole day through. The people worked and sang with great enthusiasm. Everywhere the slogan was heard: "The tamper should be lifted way above the head and baskets should be filled high with earth. Small carts should carry loads like big ones and man should have the drive of an engine." Although it was ruled that work end at dusk, the people frequently worked further into the night and went home in the moonlight, singing songs on their way. They would break off to shout the slogan: "If our mind does not freeze neither will the earth! Hurrah for a 'big leap forward' in production!" The people's spirits were very high. As they worked doggedly on, the dam went up.

There was a group of shock workers composed of young men. They acted as reinforcement. Wherever there was a difficult job there they would go and give a helping hand. Among them was a young man named Wang Teh-hui. He was the son of a poor peasant and his ideal was a happy life for all the people. When the Party called on the people to build a reservoir he knew that the time had come for him to get into action. He enrolled and took an active part in the work. When the mud and water were being dredged he was among the first to jump into the water. When he felt he could not stand the coldness he came out, "warmed up"; and then went in again. When the dam was being built he became a tamping worker. The tamper weighed 300 catties. But he and his co-workers made 700 tampings in one stretch. During the construction of the dam he was not absent for a single day. Wang Feng-hai was another of the tamping workers. Once the tamper fell on his foot and it swelled badly but he persisted in his work. Liu Pao-chi told him to leave for a rest. "I will not leave the site until the dam is built," he said, "even if one of my feet should fall off." Liu ordered him a second time to leave. He pretended to comply. But as soon as Liu went away he came back and took up work pushing a cart full of earth.

In this great struggle against nature the women were no less enthusiastic than the men. One of the women workers was Wang Su-fen, daughter of a farm labourer. It was the Party which rescued her from dire poverty, and when the Party called on the peasants to build a reservoir in the plains to change the natural conditions of Tawangtien she was inspired by the appeal and decided to do her bit in the struggle. She dug and carried earth and did tamping like the men workers. When her hands blistered she just washed them with warm water. When her legs ached she simply massaged them and went on working. As long as the men stayed working on the site she stayed.

The old co-op members, like the younger ones, vied with one another in the work of building the dam which would give blessing to their posterity as well as to themselves. Among them was old man Chang Lao-liu. He was appointed to take charge of the hot water supply. When he saw that the reservoir would soon be completed his heart was filled with joy. "In the past," he would say to those nearby, "this place used to be a source of sorrow. Now it's going to be a blessing. We can use its water to irrigate our fields. We can plant rice and reeds and raise fish in it. Isn't it a magic bowl?" Whenever he had leisure he joined in the tasks. Though people tried to stop him because he was old, he always persisted in working.

With the people working joyfully and energetically for their own happy life construction went on at a high speed. The reservoir was scheduled to be completed in 15 days. But with all working at full blast it was completed in seven days and nights. At the meeting celebrating its completion the county head of Hsushui made a speech in which he paid tribute to the workers; 34 were chosen as labour models and decorated with red paper flowers. During the meeting, a decision was made to name the reservoir "Magic Bowl" as Chang Lao-liu had suggested. A monument was erected on the dam. On the front was inscribed the story of the reservoir and on the back the names of the builders.

BUILDING WITH THRIFT AND INDUSTRY

The water conservancy department of the county estimated that the "Magic Bowl" has a capacity of 250,000 cu.m. and can irrigate 2,500 *mou* of land. As on the average one well can irrigate 18 *mou* of land the reservoir is equal to 138 wells. As most of the land in the reservoir was swamp, unsuitable for farming, its building meant no loss of arable land. On the contrary, there was even a gain, because 50 *mou* of land was reclaimed for rice in the river-bed. In the reservoir, where the water is shallow, 20 *mou* of reeds can be planted. In places where the water is deep, fish can be raised. It was therefore most appropriate to call it a "Magic Bowl."

Many as are the benefits of the reservoir it cost very little for its construction — only 29.30 yuan. This tiny sum was raised by the co-operative itself. As to the government, it spent only 0.13 yuan — the cost of the red paper for making the flower decorations! Why did it cost so little? Because it is a small reservoir and was built by the people themselves. Being a small reservoir its construction was simple, did not involve any involved technical work and took only a short time to build. In the course of the construction the workers used their own tools and paid for their own food. The 500 cartloads of stone and gravel were taken from the mountains and cost nothing. The only money spent was for lamp oil and steel wire. It can be understood why it cost so little.

The "Magic Bowl" Reservoir has been completed. The people of Tawangtien are never tired of telling how good a thing it is. "Flood waters are now no longer a terror," they say. "They have become a blessing!"

ARTESIAN WELLS

From a depth of more than 35 metres the sparkling water gushes from a pipe with a diameter of almost two-thirds of a metre. The water having been confined underground for ages seems to jump at the chance to get out — the pipe seems to be too small for its impatient passage. Fighting its way out, it finally escapes triumphantly with a loud, gurgling sound, shoots out from the mouth of the pipe and lands in the pond. It is as if it would shout Hurrah! Then, at a gentle pace, it rolls away into the distance, leaving behind it a trail which, in the brilliant sunshine, has the appearance of a strip of shot silk. One might reasonably assume that the water is drawn up by a big pump. It isn't. Nor is it drawn up by any other method. Is it a natural spring then? No, it is an artesian well of Tunchuang. Without using any motive power whatsoever its water flows incessantly day and night, its volume capable of irrigating 2, 250 *mou* of land. At the end of February, 10 artesian wells had been drilled in Tunchuang Village in an area of 52 *mou* of land. The volume of their flow is capable of irrigating 30,000 *mou* of land. Thirty additional wells were drilled at the end of April. They supply water for irrigation to 90,000 *mou* of land in the fields east of the village.

TWO LEGENDS

Tunchuang is a small village situated in the plains 30 *li* to the north-west of the county seat of Hsushui. For centuries the local peasants had believed that "Fate" decided their lives. If rainfall was plenty they would reap a tolerably good harvest. If there was no rainfall they would watch their crops wither and could do nothing. Even in years of good harvest the yield of the land was not even one hundred catties a *mou*. But why, you may ask, didn't they try to find means to irrigate their land? As a matter of fact they did. Once, before liberation, the peasants tried to dig a well. But when they got to a depth of ten metres they could not sink further because of drifting sand. Not long after agricultural co-operation they tried again, east of the village, but again they failed and for the same reason. Nobody knew where the drifting sand came from and what was its cause.

As usual, superstition of the old days supplies a legend. Indeed it supplies two! One is that, once upon a time there was a county magistrate who was a native of Tunchuang. He would drink no tea unless it was infused with the water from the spring of Tunchuang nor eat a single meal unless it was cooked with that water. He persisted in this demand even when he was away from the county. When he went to the capital on business he would have his servants carry the water of Tunchuang for his use. Later, however, the spring disappeared.

The second legend runs: Once there was a big black tortoise spirit which made Tunchuang its home. One version is that its fate was punishment meted out by the gods; another that it was its own choice. As the legend goes, it stayed in the earth for good. Its back was very wet so that the earth above its back was wetted. The place where it stayed was by and by known as Tortoise Beach. The name is still applied to a place in the village which is now a farm field. Could it be that the present Tortoise Beach was the site of the spring which supplied water to the magistrate of legend? If perchance it was, could it be revived?

The legends reached the ears of the Party committee of Hsushui County. They were at that time busy with anti-drought work. However, they sent somebody to investigate the natural conditions of Tunchuang to see whether the legends had some geological basis. Now the eastern part of Hsushui is all plain while the western part is all mountainous. In the past, wells drilled in Tunchuang showed that the underground water flowed eastward. Tradition said that there was an underground sand "river" which flowed from west to east. If there was really such a sand "river," then the water from the highland might flow through Tunchuang and come out in a spring. In that case the spring of the legend might really have existed. Reasoning thus, the Party committee decided to sink an exploratory bore in Tunchuang. This was considered to be a bold idea.

A scaffold was built on Tortoise Beach and drilling began. One metre . . . two metres . . . three metres . . . the drill went down. The young men were impatient and wanted to see water come out as quickly as possible. But the old men shook their heads. "It will take a superhuman power," they said to the drillers, "to get water out of the earth here. Maybe you can get enough to quench your thirst."

The drill continued to pierce the earth. Four metres . . . seven metres . . . ten metres . . . 27 metres! A stratum of fine sand was reached, then a stratum of pebbles. As the drill continued down, the strata of fine sand and pebbles alternated. Finally water came out and the spring of legend was confirmed.

The old men were amazed. Supported on their staffs they came to the workers and said: "The power of the Communist Party is really superhuman!"

This happened in 1956.

THE PEOPLE WHO PERFORMED MIRACLES

In November 1957 drilling began in Tunchuang on a large scale. This was a part of the plan of Hsushui's fight against nature. The county Party committee decided to drill 40 holes. To direct the flow of the water the digging of canals involving 300,000 cu.m. of earthwork in 52 *mou* was contemplated. This was a big job and required 100,000 man-days to do it.

Two scaffolds were erected. Two drilling machines were received from the county government. They were in operation day and night. As one bore after another was drilled, canals were urgently needed to drain off the flow.

The Party committee decided that the canals should be dug immediately. When the decision reached the Chien Chin No. 1 Agricultural Producers' Co-operative the cadres and members felt very glad. Though the task of digging the canals was a big one they considered their being given such a task a great honour because it showed that the Party committee recognized their ability to carry out the undertaking. On November 16 members of the co-operative began to work on the canals. It was the coldest time of the year and the weather was frequently 10 degrees below zero. The water in the old canals was two-thirds of a metre deep. To deepen and widen them the people had to work in the water. The co-op chairman was the first one to jump into the water. Then the secretary of the Party branch, Hsing Chung, and the production team leaders. Their example was followed in quick succession by others. Soon the canals were crowded. In the work of canal digging the women peasants did not lag behind the men. Hsing Yu-chen, member of the Communist Youth League, and Chi Shih-hua, head of the women's committee, organized a shock brigade composed of 12 members of the Communist Youth League. They also led in working in the water. They knew that what they did was something none of their ancestors had ever dreamed of doing. What was 10 degrees below zero to them if they could fulfil such a glorious task!

But however enthusiastic members of the co-operative were, they could not do the work single-handed. Then came several thousand peasants from 20 townships. They were responding to the call of the Party to help the

Tunchuang villagers. "The people of Tunchuang," they said, "are drilling artesian wells to irrigate 90,000 *mou of land in several townships. They are carrying out the whole county's plan of irrigation.* Now we have come to help them. Are we helping the people of Tunchuang alone? No! We are helping the people of several townships — we are helping the public. But who, you say, is the public? Well, the public is we ourselves — every one of us. This is 'each for all, all for each.'" It was with such an understanding that several thousand peasants, inspired by the communist spirit, came to Tunchuang with their own tools and provisions.

When work was at its height more than 1,000 people worked in the canals. Standing in single files they looked like big dragons disporting in the water. The earth piled on the banks of the canals was several metres high. The pumps roared and threw water over the dyke. Meanwhile in the newly dug canal several groups of stone tampers drove piles into the bed of the canal, singing their work song. The drilling machines chugged. The drills worked busily piercing the earth. Along the two sides of the canals hundreds of carts and wheelbarrows carried mud to the fields. With noises created by men and animals and the singing of work songs the site was a scene of indescribable bustle and commotion. The workers had long forgotten the cold weather. None of them showed the slightest sign of discomfort. Everywhere one heard singing. Everywhere the workers were telling each other stories of heroism. The scene was as moving as it was spectacular.

When the Hsitaho canal was being tackled, to lessen the water in the canal a small dam had to be built to plug the mouth of the canal. The dam was only a temporary structure and the water from the springs was constantly increasing in volume. There was the constant danger of a break in the structure. Should this happen, not only the lives of thousands of people would be endangered, but the progress of work would be delayed. Someone had to watch the dam and the task was important and responsible. One of the young men of Tunchuang, 18 years old and a member of the Communist Youth League, volunteered to do it. He stayed on the structure for three days and three nights defying the piercingly cold winds. Though he felt tired in the night and badly needed sleep he struggled to keep himself awake. Finally he fulfilled his task, and the safety of thousands of people and the progress of the work both were assured.

When the Hsinkaiho canal was being dug, a young man named Chi Feng-hsiang, 26 years old, did not leave the work site for five days on end. Whereas the other people did 4 cu.m. of earthwork a day, he did eight. Later he got sick but he persisted in his work. When his fellow-workers tried to persuade him to take a rest he refused to do so. "Tunchuang," he said, "will probably not drill artesian wells again. Can I afford to miss the only chance to work here?" Such was the spirit, not only of Chi, but of the more than a hundred people working on the canal. No wonder the canal was completed in five days!

That afternoon I went to see Liu Pu, the 51-year-old deputy secretary of the county Party committee, and was informed that he had gone to the work site of the drilling machines. Off I went to the site. The workers there told me Comrade Liu Pu had gone to the workers tamping in the Hsinkaiho canal. I went to the tampers. They told me that I had just passed him. "Go back and look from the bank of the river," they said. I did so. There he was among the peasants, busily digging mud.

I asked them if they felt cold.

"We are neither wood nor stone," they said. "Why, then, don't we feel cold?" they asked, and then answered their own question: "When we see Secretary Liu working here, we forget the cold. Another thing which makes us forget the cold is the thought of 90,000 *mou* of land getting irrigated."

It was men and women who defied cold and looked unflinchingly at difficulties that succeeded in digging the Peitaho, Hsingfuho, Shihchiaho, Hsitaho and Hsinkaiho canals, and moving 100,000 cu.m. of earthwork. And all this was done in the short period of two months.

SPRING OF HAPPINESS

I had a talk with the chairman of the Chien Chin No. 1 Co-operative and he told me why the peasants worked with such enthusiasm. My talk with him was occasioned by something said by Secretary Liu.

On the day before I had the talk with the chairman, Comrade Liu Pu took me to see the artesian wells. Pointing at a big canal he said, "Do you see the water there whirling around?" I said I did, and asked him whether it was a spring. "It *is* a spring," he said, "but that's not what I had in mind. What I was thinking, was that it is a spring of happiness."

Then he talked about the lotus and fish that were going to be grown in the canal and the fruit trees that were going to adorn its banks. As he spoke he smiled.

obviously feeling very happy. "When high-ranking cadres of the Central Government came to see the canals some time ago," he said, "they said that this area was going to be a beautiful garden in the future. They are right: it *is* going to be a beautiful garden, but not in the future — it is going to be a beautiful garden this very year."

This led me to visit the chairman of the co-operative.

The chairman told me the plan of his co-op. By the month of May when all the artesian wells would have been completed the co-op's irrigated land would increase by more than 3,000 *mou*. On the strength of the first group of artesian wells successfully drilled, the co-op members had dug another 400 ordinary wells. They were determined to change all their land into irrigated land — they would sow the seeds, see them grow, and reap good harvests no matter whether it rained or not. The change in natural conditions the artesian wells would bring about gave the "all clear" signal for the development of diversified economy. They accordingly planned to raise 60,000 fish in the canals in the 52 *mou* served by the bore water. It was estimated that by the end of the year they would be able to catch 120,000 catties of fish. They would plant lotus in the canals so that they could gather every year several thousand catties of lotus roots. They would plant on the banks of the canals fruit and other trees: apple, pear, peach, apricot, willow, etc. They would also plant a large number of *hua chiao* trees for their spice supply. They would raise pigs, chickens and sheep. They now had 260 sheep; they were going to have many more. As the chairman was telling me all this, he became so elated that he could no longer remain seated. Striding up and down he said: "Come here in late autumn and *have a look at our garden. We'll give you a treat with fish from the canals. If you come again several years later, maybe you'll be able to have a bite of our apples."*

There was a canal in the middle of the village which they named Hsingfuho (Happiness River). As we passed a bridge over the canal I pondered over the name "Happiness" and at once realized that happiness was a powerful factor in making the thousands of peasants work so enthusiastically.

As I stood, engrossed in thought, the chairman said: "Have you seen the canal outside the village?"

I told him I hadn't.

"You should see it," he said. "It links Tunchuang and several other townships like a chain."

The canal outside the village has a length of a dozen *li*. It winds its way eastward from Tunchuang and connects it with Hsihsuchuang, Tingchuang, Langwuchuang and other villages. In the past, the soil of all this region, dark in colour, was "like plaster when it is wet and like brick when it is dry." The weeds were waist-high and the yield of the crops was, at most, only tens of catties a *mou*. Whenever rainfall was scanty the harvest would be tragically small. But the water from the artesian wells of Tunchuang will give new life to the farm fields. It will make their soil fertile. If paddy rice is planted the yield will be 1,000 catties a *mou* and if kaoliang (sorghum) is planted, 400-500 catties a *mou*. Now the 40 wells of Tunchuang are completed, and water circulates with a flow of 2 cu.m. per second. The 90,000 *mou* of land in the region will have a yield many times its old amount. This canal not only links several townships but also the hearts of the villagers.

So this is our era, an era of miracles. The miracles are not performed by gods but by the people under the leadership of the Communist Party. They are the spring of the people's happiness.

FIRST SOUND OF VICTORY

Within the short period of four months the natural conditions of Hsushui were radically changed. This was nothing short of a miracle. Having changed the natural conditions of their county, the people of Hsushui began to work freely for increased production. Members of the county Party committee knew beforehand that the change in natural conditions would result in an upsurge in production. But they also knew that this upsurge, like the transformation of natural conditions, could not be brought about without strong Party leadership. They accordingly made a study of the measures to be taken to ensure increased production. Their past experience in leading production movements and their knowledge of the county's conditions told them that the planting of summer and high-yielding crops was pivotal in bringing about a "big leap forward" in farm production. If, for instance, 150,000 *mou* of land were planted with early ripening crops and 340,000 *mou* with winter wheat, then there would be a total of 490,000 *mou*. If the average yield should be 250-300 catties a *mou* then the total yield would be 120-150 million catties, which would be equal to the total amount of production of the whole county in 1957. With regard to high-yielding crops the area of sweet potato would be increased from the 70,000 *mou* of 1957 to 450,000 *mou*, an increase of over five times.

If the average yield should be 2,000 catties a *mou* then the total yield would be equal in value to 220 million catties of food grains, an amount which would exceed the total amount of production of the previous year by more than 70 million catties. After a thorough study of the situation, the Party committee concluded that the original grain production plan of 400 catties a *mou* was too conservative. As a result of discussions held by the masses the figure was raised to 2,000 catties a *mou,* an increase of close on 10 times over the figure of 1957. The realization of the plan would mean that each person of the population of the county — 310,000 people in all — would get 4,000 catties a year. To make the fulfilment of this target possible the Party committee launched a movement for high production. The people of the county were called on to produce 5,000 catties a *mou* of wheat, 1,000 catties and more a *mou* of cotton, and 100,000 catties a *mou* of *shan yo* (yam). They were called on to exert their utmost effort so as to sound the first stroke of victory. In short, an extraordinary harvest was expected in 1958.

The Party committee's plan for a "big leap forward" in production soon reached the townships and co-operatives. The people welcomed it with all their heart and held spirited discussions as to the best way of carrying it out. Everybody gave great thought to ways of increasing production. Three hundred catties . . . 400 catties . . . 1,000 catties . . . 1,500 catties . . . 2,000-plus catties . . . the plan for per *mou* output changed. Even still more ambitious plans were drawn up. A new movement for high production was launched throughout the county.

To ensure the first victory on the production front the cadres and the people of the whole county worked in close co-operation in their struggle for a bountiful summer harvest. A movement for planting early ripening and high-yielding crops was launched. Although the weather was very cold the peasants got up early in the morning and worked all day long in the fields — even after dusk. Cartloads of all kinds of fertilizer were sent to the fields, one after another. When there were not enough draught animals push-carts were used. Some was even carried. As a result, all the fields for early ripening crops were very well manured. When there was not enough seed for planting, the people would pool whatever they could spare. During the sowing season, to make sure that all work was done at the proper time the peasants ate their meals in the fields and slept there, too. Work with such diligence could mean nothing but success. Successful planting was constantly reported from all parts of the county. By April 10 a total of 110,000 *mou* of land had been sown with seeds of early ripening crops, and work was still continuing at top speed. The growth of the young wheat plants on some of the fields was found to be unsatisfactory, so a week was set off as "wheat reinforcement week," during which the peasants were called on to replace all weak plants. In all, 67,000 *mou* of wheat got "reinforcements" and an even, verdant growth was seen everywhere.

To do well the work concerning the summer crops became the aim of the peasants' struggle in every township and co-operative. Thrice the peasants were called on to redouble their efforts. Legions of peasants, men and women, were active in the fields. They watered the wheat plants, manured the fields, and removed the weeds. Some of the co-operatives had no experience in dealing with wheat. In such cases they learned from others. More than 300 cadres of the townships and co-operatives walked many *li* to learn the methods of *san pu*[1] and *wu ku ting*.[2] Having learned these methods they came back and immediately had them popularized. They supervised each other's work, encouraged each other, and learned from each other. They divided their wheat fields into three kinds and planted on them flags of specific colours: red on the best or first-class wheat fields, blue on the second-class fields, and white on the third-class — the worst. "Pluck away the blue flags, destroy the white flags, and plant the red flags" — this was the slogan of all the townships and co-operatives. Whenever a field had a blue or white flag planted on it the production team responsible for that field would immediately get busy. Usually a change for the better was seen in the wheat sprouts within five days after the blue or white flag was planted on it.

The township of Tsuichuang, which boasts of 10 co-operatives, had a different method of stimulation. Pictures were pasted on the walls of all the co-operatives. They were of six kinds: rocket, aeroplane, motor car, horse, ox, and man walking slowly, and to each picture was appended a few rhyming lines. On the rocket picture, for instance, were these lines:

> Of their ability, men of the No. 2 team have pride.
> In making the "big leap forward" they took a rocket ride.

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[1] *San pu* or "three universals": universal application of fertilizers, universal watering, and universal second ploughing.

[2] *Wu ku ting* or "five definites": definite persons, definite fields, definite procedure, definite amount of production, and definite number of workers.

The lines for the man walking slowly were:

> Can you blame the people who No. 3 team mock?
> Walking sluggishly they have become a laughing-stock.

Vying to do better work seized everyone. Each worker wanted to be a first-rate worker. In quick time Tsuichuang's 6,700 *mou* of third-class fields had been promoted to second or first class.

Taking care of the summer crops was, like many other things in production, a difficult job. After compost has been applied to the wheat fields, for instance, an application of chemical fertilizers must be added. In this case, when there was a shortage of chemical fertilizers, the people used the earth from *kang*[1] or from the roofs. When the co-op members of Shakouchuang found that their wheat fields were in need of fertilizer they voluntarily surrendered one of their *kang*. Their slogan was: "To struggle for a big harvest we will give up our warm *kang*." Altogether 54,000 *kang* were taken down and the earth given to the co-ops. If the earth from ground fireplaces and walls are taken into consideration a total of 390,000 cartloads of fertilizers was obtained, equal to 1.2 cartloads of fertilizers to each *mou* of wheat field. As the result of hard work done by 70,000 people, the requirements of the wheat fields of the whole county were fulfilled, i.e. a universal second application of fertilizer, a universal watering, and a universal second ploughing before the Clear and Bright Festival. Consequently the growth of the wheat plants was greatly improved.

In their struggle to realize the "big leap forward" in production the peasants resolutely took every conceivable measure conducive to increased production. Seventy-five thousand peasants, for instance, began the work of deep cultivating when the earth had not yet come out of its frozen state. The earth was hard but the people were not discouraged. "The earth is hard," they shouted as they dug, "but our will is harder still." As their picks dug the earth inch by inch, sweat trickled down their foreheads like rain. Difficulty is the mother of wisdom. When they saw that their picks dug with difficulty they sprayed water on the fields to soften the soil, and they did their deep working of the soil by stages at noon. With their mind concentrated on work they forgot fatigue and cold. They worked day and night. In the night lanterns were lit and the fields were sprinkled with lights. A miracle happened: within ten days all the 132,000 *mou* of high-yielding land of the county was deep cultivated to a depth of 1.2 *chih*,[1] irrigated, and given an additional application of compost from 10,000 to 20,000 catties a *mou*. Reviewing the work they had done, the co-op members commented: "We are not afraid of drought; we are not afraid of floods. Thanks to the deep working and the additional application of compost, we are going to reap 20 piculs of grain a *mou* for sure."

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[1] A heated earthen or brick platform used by Chinese peasants as a bed.

There had been no rain or snow since the autumn of 1957. The soil was very dry. The work of sowing was handicapped. The situation was especially exasperating with regard to the plan for sowing seeds of high-yielding crops. But the veteran cadres and peasants were not easily discouraged. They decided to wage a struggle against drought. "We will sow under rainless conditions and we will reap good harvests in spite of drought," they declared. Before they carried out their struggle three things were examined. They examined the wells and canals and made sure they held sufficient water. They examined the levelled and improved ground and checked if the work had been well done. They made an examination of the vessels available for holding water. Anti-drought work is most difficult in the mountainous regions. Here the soil is drier than elsewhere and sources of water are few. But the people were not disheartened. In the four townships of Tungfushan, Yihochuang, Nanlungshan and Tawangtien the peasants, to ensure that sowing would be done at the proper time, launched a movement for sending jars and tanks to the mountains and carrying water uphill from the plains. Altogether 5,600 big jars and tanks were sent to the mountains from the four townships and 3.89 million catties of water stored in them. In doing this difficult job the co-op members showed a heroic spirit. Li Kuei-ying, a woman member of the Communist Youth League from Pailienyu, engaged the male members of the co-operatives in a water-carrying competition. Members of the co-operatives of Tungfushan used 1,200 carrying poles and 2,400 pails to carry water from five *li* away. None of the people ever complained of difficulties. They tried every means to increase the efficiency of work in carrying water. They made 106 water carts. The amount of water carried with these carts in a single day was equal to 8,000 pails of water. The peasants of Yihochuang made *san chao*[1] and *sze pi*[2]

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[1] One *chih* is equal to about one-third of a metre.

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[1] *San chao* or "three finds": find sources of water supply, find vessels for storing water, and find the vessels for carrying water.

[2] *Sze pi* or "four competitions": compete in the economical use of water, compete in the amount of water stored, compete in diligence, and compete in will-power.

their slogans. Big jars, basins and tanks were sent to the mountains, and 4,000 cu.m. of water stored in them.

In the plains more than 30,000 *mou* of land suffered from a deficiency of water sources though water conservancy equipment was not lacking. There was therefore a demand for works which could immediately irrigate the land. The following is a song composed by members of the co-op of Kaolinying Village:

> You warriors, men and women, get up and fight.
> Let all machines and water-wheels work all the year round.
> Cut off the tops of the Kunlun Mountains for Heavenly Dew.
> Push aside the Taishan Mountains for springs in the ground.

An anti-drought struggle was waged. Within five days 240 wells, with shafts lined with either earth or brick, and 30 wells equipped with mechanical devices, were dug and many old wells sunk to greater depths. Two thousand co-op members of Nanlungshan Township worked day and night and dug a big canal which brought water from 10 *li* away and supplied water to seven villages. The co-op members of Tahsichang Village defied all kinds of difficulties and succeeded in digging a well in a sandy region, thus solving for the villagers the problem of their water supply. When the cadres and co-op members of the surrounding villages heard the news they all came to see the well, and the superstition that wells could not be sunk in sandy soil was smashed. Originally the people of Hsiaoliuchuang Township had no intention of sinking wells in a sandy area. But having seen the well of Tahsichang Village they were encouraged to do so. Subsequently they dug no less than 34 wells — all in sandy ground.

In regions where the conditions of water conservancy were favourable a movement for spring irrigation was launched in which more than 60,000 people took part. In order to carry out the work of irrigation and sowing at the proper time the co-op members slept in the fields. Their motto was: "Men may rest but not the machines and water-wheels." They devised many means to combat the water-transport shortage. They bought a number of water-wheels. Repairing groups were formed to overhaul old water-wheels. The co-operatives displayed the socialist spirit and helped each other. When Tayin Township, for instance, had a shortage of water-wheels during their spring irrigation — which was a heavy task — the townships of Shakou and Chingmiaoying helped with 40 water-wheels. Drawing on the experience of the people of the Tsanghsien Special Administrative Region, the Party committee called on the people to make or reconstruct water-carrying equipment themselves, thus solving in time a troublesome problem.

At the critical moment of gaining the first victory in reaping big harvests the method of leadership of the cadres of the county and townships also changed. The county Party committee proposed that cadres cultivate experimental land and popularize the new farming methods evolved in their work. The cadres soon acted in accordance with the instructions of the Party committee.

Deputy Secretary Liu Pu cultivated a plot of experimental land in Tunchuang. He was always glad to explain his new methods to others. His aim was to reap at least 5,000 catties of grain a *mou*. His method was as follows: to dig the earth to a depth of 1.2 *chih*, apply 60 cartloads of manure, irrigate seven times, hoe eight times, and plant three crops with wheat and cotton in alternate rows and sweet potatoes in the place of the wheat crop after it had been reaped. His aim was to reap 5,000 catties of wheat, 1,000 catties of ginned cotton and 100,000 catties of sweet potatoes. Every one of the cadres of the townships and co-operatives in the 25 townships of the county cultivated experimental plots and popularized their experiences.

The cadres of the townships and co-operatives were all present in the fields when the seeds of the early ripening crops were being sown.

A command was formed in every township and a sub-command in every village for directing the struggle. The townships and co-operatives transferred their offices to sheds in the fields. The five-starred flag was seen at the door of every shed. The cadres no longer carried out their duty of leadership by speech and meetings but by actual work in sowing and ploughing; meetings were no longer held in office rooms but in the fields.

Encouraged by the prospect of a first victory and a big harvest the cadres and people of the whole county fought their battle in the fields day and night.

FROM NOVICE TO WATER CONSERVANCY ENGINEER

That Li Shang-jen, vice-head of Hsushui, is a first-class Red conservancy engineer in the county is the opinion of everybody, be he a worker on the construction site of the Paoho River reservoir, a member of the people's council, or a cadre of any other county level organization.

One usually thinks that an engineer is a highly-educated intellectual; at least he must be a college graduate. One can hardly believe that an engineer can come of peasant origin and has an educational level of only a primary school pupil.

In the course of socialist construction, it is a frequent occurrence that a revolutionary cadre may not necessarily know (when appointed) the work of which he is the leader. Li Shang-jen was such a cadre. In 1955 he was appointed to take charge of the construction of the Hsiangshan Reservoir. At that time he knew nothing about the construction of reservoirs. When he was informed of his appointment he felt very proud but also very nervous. He was proud because he was to engage in a work which would bring happiness to the people. He was nervous because he had neither knowledge nor experience of this kind of work. But, he thought, with the leadership of the Party and the support of the peasant masses, together with his own avidity for learning, he could overcome the difficulties that might confront him. So he gladly accepted the job.

Having taken up his post Li Shang-jen invited a comrade named Tung Chun-sheng, who had been trained in agricultural water conservancy, to be his coach. Whenever there was anything he did not understand he would ask Tung to explain it to him. During the time when the reservoir site was being surveyed his health was poor and often he was near to collapse. His colleagues repeatedly advised him to take a rest but he refused to do so. Accompanied by the technicians he trudged the plains and mountains every day. He was constantly asking the technicians questions such as: What is an altitude? What is a horizon? He learned how to use the level. He set the rod and planted the flag himself. Thus in the course of the construction of the Hsiangshan Reservoir he absorbed a lot of technical knowledge.

And much more lies to the credit of Comrade Li Shang-jen. In the winter of 1957, under the leadership of the county Party committee the peasants of Hsushui launched a movement for the construction of water conservancy works. During the movement Li Shang-jen, together with Wang Keng-chen, head of the rural work department of the county Party committee, led the peasants to build the Shihkochuang and Tachuang reservoirs on the banks of the Paoho River. In building these reservoirs Li waged a relentless struggle against conservatism. He put his entire confidence in the ability of the masses. He was never tired of learning. As a result he fulfilled the task entrusted to him in a way which entirely conformed to the principle of "achieving greater, quicker, better and more economical results."

The Paoho River is Hsushui's longest and most capricious river. For a long time the county Party committee had contemplated the building of a reservoir in the region between Shihlungshan and Huangshan so as to get the river under control. Meanwhile the water conservancy department of the provincial government also wanted to build a reservoir in Hsushui and had twice sent people to make investigations. Construction was pending because personnel of the designing section were still carrying out the geological survey. In the autumn of 1957 the county Party committee wanted to make the construction of the Paoho River reservoir a county enterprise. It was to be a reservoir capable of storing tens of millions of cu.m. of water with a dam 12 *li* in length. The project was an ambitious one and its carrying out fraught with difficulties. It was for this reason that when the Party committee asked Comrade Li Shang-jen to take charge of the work he first of all did not dare shoulder the responsibility. But after the "big leap forward" movement which had been going on all winter, and especially after the building of the Shihkochuang reservoir which, with a water-holding capacity of 11.5 million cu.m. and a 28-*li*-long dyke, was completed in 6 days, he began to realize the great power of the masses. He said to himself: "When the mind of the masses is set on doing something, all difficulties can be overcome, no matter how great they are." Having regained his confidence he promised to take charge of the work of building the Paoho River reservoir. This was in December 1957.

To build the Paoho River reservoir, the first step was to estimate the cost of the project. At that time several comrades of the designing section of the water conservancy department of the provincial government were still in Hsushui. Li Shang-jen had a talk with them. He inquired about the geological and hydrological conditions. As they were talking, Comrade Tsui, head of the designing section, Comrade Hou, chief engineer, and Comrade Li, vice-director of the water conservancy bureau of the special administrative region, arrived and joined in the talk. After hearing the report on the results of the geological prospecting, they began to calculate the amount of work to be involved in the construction of the reservoir, and discuss the method of construction and the several plans for the project drawn up by the comrades of the designing section. According to one of these plans the cost was 7.3 million yuan, according to another, 5.3 million yuan, and according to a third, 1.8 million yuan. The reservoir of the last plan would prevent floods but would not be a multiple-purpose project. Li Shang-jen was in a quandary. The Hsiangshan Reservoir which had a capacity of 2.8 million cu.m., he thought, cost only 70,000 yuan, and why should a reservoir holding 40 million cu.m. of water cost so much? But the Paoho River reservoir must be built. What was he to do? He gathered information on the various items of work and made an estimate himself.

After repeated calculations he finally drew up a plan which cost only 1.5 million yuan. People asked him why, under his plan, the cost was so little. "Well," he said, "my plan is to economize wherever possible." The fact was, he re-calculated all the items in the provincial plans and made drastic reductions on each. On the matter of wages, the designing section's first plan allowed 1.3 yuan a day for each worker, and its second plan 0.8 yuan. But according to Li's plan, no wages were given to the workers except a subsidy of one catty of rice a day for each person, their work being counted as work-points by their co-operatives. With regard to the houses built for the people who had to move, the first provincial plan allowed 300 yuan for one room and the second plan 130 yuan. But according to Li's plan each room cost only 50 yuan. While the provincial plan allowed 400,000 yuan for tents and miscellaneous items, Li's plan did not include the expenses for tents; the inhabitants of four villages were to be asked to provide the workers with temporary living quarters. The provincial plans allowed five per cent of the total expenditure to be used as a fund for propaganda purposes. But Li thought that receiving sets necessary for such purposes could be borrowed from some of the government departments and, at most, a couple of dry batteries might be bought.

Which was the best plan? This question, of course, could not be decided offhand. But having made a careful study of the project Li Shang-jen was thoroughly conversant with all the conditions of construction, and he knew what could be done. He was overjoyed when further calculations convinced him that the job could be done at a cost of only one million yuan. He reported the results of his calculations to the county Party committee. The comrades from the water conservancy departments of the province and the special administrative region promised to give full consideration to Li's plan.

One day Li was notified by the county Party committee to go to Mancheng and talk over the problem of building the Paoho River reservoir with Li Yueh-nung, secretary of the regional Party committee. He went accordingly.

"Is it true that you have decided to build the Paoho River reservoir?" asked Li Yueh-nung.

"The Paoho River is a great sorrow to the people of Hsushui," said Li Shang-jen. "We must build the reservoir this year."

"Very well. But 7.3 million yuan is really too much. You had better make another calculation and see if the work can be done more economically."

"I've already made the calculation. One million and a half is plenty and I think one million will do."

Li Yueh-nung was very pleased at Li Shang-jen's declaration. He looked at the latter approvingly and said: "If no subsidy comes from the provincial government will you build it if you have to borrow money with interest from the bank?"

The reservoir would be a great boon to the people, Li Shang-jen thought. They would be glad to build it even if they had to pay interest for a loan. "We will build it even if we have to borrow the money and pay interest for it," he said decisively.

"Very well," said Li Yueh-nung. "Go back to your county and talk the matter over with the county Party committee. Meanwhile we shall make a decision as soon as possible."

Having talked with the county Party committee and obtained its backing Li Shang-jen came to the regional Party committee again. Li Yueh-nung was out and he was received by Li Pei-hsien, the deputy secretary.

"You have made a wise decision," said Li Pei-hsien. "The provincial government will probably make an appropriation. The regional Party committee will give you its backing. You may go back now. We shall notify you as soon as a final arrangement is made."

On December 28, Li Shang-jen was notified on the phone by Comrade Wang, director of the water conservancy bureau of the special administrative region, to the effect that the provincial government would subsidize the project with one million yuan and that preparations for construction could begin at once.

The people of Hsushui received the news with great joy. "With so much help from the government," they said, "we must do the work well." On December 29 the county Party committee held a discussion on the question of organization and drew up a list of the personnel of the directorate. Li Shang-jen had forgotten that New Year was approaching. Early in the morning on the 31st he and some other comrades left for Hsiehtsun to make preparations for the setting up of the directorate of the project. When he stepped out of the office of the county people's council he was accosted by one of the comrades: "I heard that you're planning to go to Peking for hospitalization — is that so?"

"Well, I was," Li replied. "But seeing that construction of the reservoir is about to begin, I think I'll have to let that wait until the reservoir is finished."

As soon as work was about to start a big problem arose. The Paoho River reservoir was to be a medium reservoir holding tens of millions of cu.m. of water, having a big dam 12 *li* long. The project was a big one and the work of construction complicated. The designing work had not been complete yet, and how was construction to begin? Li Shang-jen went to the designing section and made inquiries. They told him that the task of designing had been entrusted to the water conservancy bureau of the special administrative region. When he asked the comrades of the bureau they told him that the designing work would be finished in six months' time. Li thought the time far too long, and said so. He suggested that construction and designing proceed at the same time. The comrades of the water conservancy bureau agreed. It was decided that the bureau design the main dam, spillway and channel first and the directorate first work on the organization of labour and the moving of the people.

Before actual designing began the designing section made a general outline. Li Shang-jen read it. He calculated the storage capacity of the reservoir and the area it would irrigate and considered it unsatisfactory, for the dam of the design was 17.5 metres high and the capacity of the reservoir only 29,940,000 cu.m. which was too small for the volume of water the reservoir might receive. The average annual rainfall of Hsushui is 500 mm., the maximum being 1,000 mm. Thus one big downpour would fill the reservoir to the brim. Under such conditions the channel would have to be enlarged so that more water could be let out. This would mean that the reservoir could irrigate only 50,000 *mou* of rice fields and 10,000 *mou* of wheat fields and that 237,000 *mou* of land could be irrigated only twice a year, spring and winter. He was sure that such a reservoir could not satisfy the demands of the people. Since, he thought, a relatively large sum and a huge amount of energy are to be spent on the reservoir why not build an adequate one? Having made further calculations he went to the designing section again. He proposed that a reservoir be built with a main dam 19 metres high and a capacity of 61,000,000 cu.m. The comrades of the section were not easily convinced. After a long discussion, agreement was finally reached. The reservoir was to have a main dam 18.83 metres high and a capacity of 60,000,000 cu.m. The width of the channel was reduced from 10 metres to 4 metres. Such a reservoir would be able to irrigate 400,000 *mou* of land.

Li Shang-jen and the comrades of the designing section also argued over the question of power generation. It was Li's opinion that, with the increased height of the dam, water power should be utilized to generate electricity. But the comrades of the section said "No!" without giving any reason. Li pressed his point. "Ordinarily," they explained, "the amount of water is too small and can generate only about 100 kw. Besides, in time of drought, power generation would have to cease. Thus the benefit does not justify the expenditure."

Was it really not worthwhile building a power station? Li Shang-jen had his doubts, though he was no expert on hydro-electric power generation. But he was inclined to think that every bit of use should be extracted from the project. Owing to insistence on his part as well as on the part of other comrades of the county government he finally had his way. The designing section agreed to leave room for the building of a power station.

Construction began. Li Shang-jen was a ubiquitous figure on the site directing the work of construction. On the hills, in the ravines, on the plains, rain or shine, he was everywhere, walking with his hobbling gait. In the night he suffered from cold sweats, insomnia, and high-temperatures. But aside from injections every two days and dieting on some more nutritious food, he worked as if there was nothing the matter with him. Many people advised him to take a rest but he would not listen. An appointment had been made with the Paoting Hospital as far back as autumn 1957 for medical examination. The time had long passed and Li Shang-jen seemed to have forgotten it. In January 1958 he happened to be in Paoting on business. It was only then that he accepted a casual examination after which the doctor gave him a document describing his condition and strongly advising him to leave for a rest for a short space of time. But when he returned to the county he did not mention this to anybody. When he was asked about his health he merely said that the Paoho River was his greatest trouble and the completion of the reservoir would restore his health.

When the 13,000 peasants who were working at full blast on the reservoir thought of the benefit the whole county was going to derive from the reservoir after its completion and the happy life socialism was going to bring to them, their enthusiasm became greater and greater. As a result, many labour heroes appeared. The construction site was a spectacular scene of labour. Taking part in the work there filled the hearts of all with infinite excitement and joy. And everyone knew clearly the important role Li Shang-jen played in this big struggle against nature. Thus whenever his name was mentioned it was with great admiration. The people called him, as a tribute to his efforts and his zeal, "chief engineer of the Paoho River reservoir." But whenever he heard anybody mention the title he at once stopped him and said: "All achievements should be credited to the county Party committee and Party committees at higher levels. It's true I've done some work, but I'm far from being an expert."

That was typical of Li Shang-jen's modesty, yet he uttered a great truth, for nothing in the world can make a member of the Communist Party feel complacent.

RED EXPERT

In the course of building water conservancy works and fighting against nature many heroic deeds were performed and many model personages emerged in Hsushui County. Of these personages Wang Keng-chen, head of the rural work department of the county Party committee, was one. From the time it was decided to build reservoirs in the plains he had carried out the tasks entrusted to him by the county Party committee. He and 54 cadres worked laboriously on the construction sites of the reservoirs for three months. He pledged not to return to the county Party committee until the reservoirs were completed.

What made Wang Keng-chen so determined in his effort? This question can be better answered if we look into his origin and career.

Comrade Wang Keng-chen was born in Hsushui. He worked as a farm labourer for a landlord when he was a small boy. He joined the Communist Party after the

War of Resistance to Japanese Aggression broke out. Later on he was appointed secretary of a village Party branch. After the "mopping-up" campaign in 1942 he was transferred to the post of district militia leader. He and his men fought in the vicinity of Paoting and along both sides of the railway. During the later period of the War of Liberation he acted as secretary of a district Party committee and took part in the land reform. Later on he was appointed vice-head of the organization department of the county Party committee, and, later, head of the rural work department.

From the early years of his life Wang Keng-chen had known by experience the sorrow brought by drought and unharnessed rainfall. During the most difficult days of the War of Resistance to Japanese Aggression the invaders intensified their oppression, and to add to the peasants' misfortunes, the county was plagued by floods. After the land reform the people, it is true, all got their share of land. But the condition of drought in the spring and excessive rainfall in the summer continued and it was impossible to quickly improve the people's life and increase their production. As head of the rural work department Wang Keng-chen's chief enemy was, of course, natural calamities. In the spring he would go to many places to help the people to sow and fight the drought. Often he had to rack his brains to discover fresh sources of water supply. In the summer he would be seen inspecting the rivers and dykes day and night, rain or shine, for the prevention of floods and waterlogging, the most important work of this season. Over this period Hsushui suffered from floods almost every year. For this reason the idea of water conservancy had been planted in Wang Keng-chen's mind and crystallized into action with the construction of reservoirs in the plains.

Acting in accordance with the Central Government's policy of giving priority to storage reservoirs, small reservoirs, and reservoirs built by co-operatives, and with the instructions of the regional Party committee, the county Party committee decided at a meeting to build the first reservoir in the plains at Shihkochuang. The work was to be experimental in nature and was entrusted to Comrade Wang Keng-chen who felt honoured by being given such a task. But he also felt worried because he had had very little education and knew next to nothing about water conservancy. He hated himself for not having studied hard enough in the past, resulting in his helplessness now, when called on by the Party and people to take up the task. "However, there's no sense in regret," he said to himself. "The thing is not to revile the past but fit oneself in the present." Getting a handbook on the construction of reservoirs he determined to change himself from an ordinary cadre in rural work to a man familiar with the work of water conservancy. He read with great concentration. Whenever he came to something he did not understand he would ask the technicians of the water conservancy section to explain it to him. He learned as a pupil of a primary school learns to read the characters, mastering them one by one. Meanwhile he linked the theories of the book with actual work on the construction site. Soon he was able to express individual opinions on the design of the reservoir. But he was by no means content with the small amount of knowledge he gained what seemed to him so slowly. How could the work of construction be made to go on more smoothly? How could the secretaries of the township Party committees be made to understand all the technicalities? These were the questions which bothered him day and night.

The work began. At the meeting of the secretaries of the township Party committees, Wang Keng-chen explained to them the plan of the construction and the requirements in quality. He was at pains to do so in very clear terms. Knowing that they were not familiar with the metric system he converted all the figures into Chinese measurements so that not only the secretaries but even the peasants could understand them perfectly. The technicians were amazed, for they knew that, only a fortnight previously, he was totally ignorant of water conservancy technique yet here he was talking freely of problems involving complex mathematical figures. They did not know the many winter nights Wang had spent in ploughing through his volumes while they were fast asleep.

"You must learn," Wang Keng-chen told the secretaries, "the metrical figures, volume of flow, degree of incline, etc. I'm going to ask the technicians to give you lectures. You must study hard, for otherwise you will be unable to become model cadres in the construction of the reservoir; you will also be criticized for not doing your best in performing the task the Party has entrusted to you."

Truly study is very important. In the course of carrying out the socialist revolution, in the course of the struggle against nature, one cannot do his work well unless he is equipped with technical knowledge. Without technical knowledge one cannot give the people effective leadership in the fight against nature. Wang Keng-chen knew this, and the experience he gained while making a survey for the reservoir site made him know it still more clearly. Surveying is the fundamental task in *building a reservoir. The quality of the reservoir depends* on the accuracy of surveying while the time of beginning construction depends on the speed of surveying. However, the technicians often sticked to conventions and old methods of work. Under the pretexts of scientific requirement, standard quality, regular practice, etc. they frequently caused unnecessary delays. The county Party committee demanded that construction begin early. They did not want it to begin in the height of winter for that would cause many difficulties and might even cause a failure in the entire undertaking. But the technicians did not understand this — or did not care to understand it! They talked about their difficulties; they said that their instruments were too old, the technical level of their men was too low, etc. It gave Wang Keng-chen infinite trouble to convince them of the necessity of beginning construction early. Although they finally complied, Wang was exasperated. More than ever Wang felt that the Party members should have technical knowledge — Red technical knowledge!

After construction began progress was rapid. But a new problem arose with regard to the quality of work. In doing the earthwork, some of the workers used frozen clods. In tamping, some of the workers failed to act up to requirements. But at this stage quality was vital. Unless quality was assured it would be dangerous to store water in the reservoir when the rains came. To cope with the situation and avoid bad quality of work the county Party committee issued directions, published bulletins, made daily broadcasts and discussed the problem at meetings of the Party secretaries. Meanwhile

Wang Keng-chen had his own method. If he heard that members of any co-operative used frozen clods in their earthwork he would go and carry earth on that particular job to set an example to the workers. He would do this for hours on end and, at the same time, superintend the work of others. When he knew that tamping workers of any co-operative failed to act up to requirements, he would set them an example by doing the work properly. When carrying earth or tamping he would ask the workers: "Which village do you come from?" Having received an answer he would say: "Now, this is the canal which will bring water to your village to irrigate your land. It will save a great deal of your labour and give you a great deal more grain."

This, of course, would make the workers feel very happy. "But," he would immediately continue, "if your work is slovenly, it may cause a breach in the dam and, when the dam breaks, all your crops, and maybe your village too, will be gone."

Hearing this, the workers would pay attention not only to speed but also to the quality of their work. With the people working with heroic spirit, the Shihkochuang reservoir, which was scheduled to be completed in 15 days, was completed in nine days.

In the course of the work many people made a "big leap forward" in their personal character. Inspired by the revolutionary spirit of the masses the technicians made the overcoming of difficulties a usual practice. Their skill was further improved in the course of hard work. Their efficiency in surveying increased many fold. The surveying of the site of a small reservoir would be completed in one day. If surveying began in the morning the necessary figures were supplied in the evening. The completion of the Shihkochuang reservoir was the *signal* for an all-out effort in water conservancy in Hsushui. It laid the foundation for a successful struggle against flood and drought, ensured big harvests of grain, and played a big part in the ideological progress of those concerned in the building!

Wang Keng-chen was an ex-soldier. In both the War of Resistance to Japanese Aggression and War of Liberation he, together with the people of Hsushui, drove away the Japanese invaders and the Kuomintang reactionaries from the county. In doing this an unbreakable tie was forged between him and the Hsushui people. After liberation he had long wished to find a way to free the county from the calamities of flood and drought. His wish was not, and could not be, realized in the past because such a great deed performed with collective effort was unimaginable without the socialist co-operatives. Now the Party has helped the people to find the right path. This is the main reason why Wang Keng-chen had been able quickly to equip himself with technical knowledge in water conservancy and why he could immediately put his knowledge to use.

Just before the Spring Festival Lin Tieh, first secretary of the Party committee of Hopei Province, and Li Yueh-nung, first secretary of the Paoting regional Party committee, came to see the Shihkochuang reservoir. Viewing the 10,000-*mou* reservoir, they realized that if a storm came after water was stored in it, the force of the waves lapping against the dam would be very great. Something had to be done about it. Wang Keng-chen studied the problem with other comrades. As a result he designed a cross dam in the reservoir which would not only break the strength of the waves but also increase the storage capacity of the reservoir. Wang Keng-chen, who began life as a farm labourer had had very little education. But he is loyal to the cause of the people. He is quick to understand the meaning of what the higher cadres say. He has mastered enough technical knowledge to merit the appellation of a Red water conservancy expert.

KEYS TO SUCCESS

How could the Hsushui people change the natural conditions of their county and accomplish so much in such a short time? What was the secret of their success? The answer is as follows:

1. *Political education.* The Rectification Campaign and the Socialist Education Movement in Hsushui were a great indirect aid to the work of water conservancy construction. These movements made the county Party committee realize that they must look upon "politics (meaning political education and understanding) as the guide" and that ideas are the soul of action. They therefore paid more attention to ideology and advanced the slogan: "politics first!" with the launching of all movements. In this way work in the Rectification Campaign in the county-level organs and countryside was done with more thoroughness and ideological work was carried out on all fronts. The method of the free airing of views and spirited debate was adopted. Everything was debated first before it was done, and everything was debated whenever there was any doubt. Big things were debated on a big scale and small things on a small scale. During the debates facts and reasons were what counted,

and all arguments were driven home thoroughly so that conviction was not only expressed but actually felt and no one was expected to say he believed when he still had doubts. This was in essence the first step taken in agitating the people to take an active part in the work of water conservancy construction.

2. *United effort for a common aim.* In the course of building water conservancy works all government organs and departments were united for the attaining of a single end. The work of all government organs and departments was put under a single control. The county Party committee made all arrangements under a unified system. All organs and departments co-operated with each other to the fullest extent. Last but not least, the masses were agitated and their support relied on so that the tasks could be fulfilled with collective effort. In planning for a central task the authorities of Hsushui County gave detailed instructions to the departments concerned, including those of the townships and villages so that they could perform rear service for the successful fulfilment of the task.

3. *Visiting, experimenting and popularizing.* In agitating the masses to build water conservancy works the county authorities adopted the method of visiting, experimenting and popularizing. They never allowed their action to be governed by subjective ideas. They never blindly followed the experience of other places and rashly popularized it. For instance, when the Shihkochuang reservoir was being built, a number of cadres and co-op members of 12 townships were organized to visit the site of the reservoir or take part in its construction from beginning to end. Through this, they mastered the technique of building reservoirs in the plains. They

were thoroughly familiar with the merits of such undertakings. After they returned to their respective townships they organized, in accordance with the unified plan of the county, the labour force of their townships, and soon inspired enthusiasm in the building of the reservoirs. Consequently it was possible to carry out water conservancy construction in accordance with the principle of "achieving greater, quicker, better and more economical results."

THE NIEHHO RIVER FLOWS AROUND THE MOUNTAINS

Ku Lei

Using their own financial and material resources the peasants of the Tungliang Mountains, Wushan County, Kansu Province, have succeeded in building a canal, known as the Tungliang Canal, 60 *li* long, which leads the water of the nearby Niehho River around the mountains and irrigates land high on the hillsides. The canal has a volume of flow of only 0.7 cubic metre per second. As a natural phenomenon it may not be so marvellous. But as a feat of human endeavour in fighting against nature, as a symbol of the peasants' pursuit after a happy life, boldness in creative activity, and attempt to change an old dream into reality, it is an important event fraught with significance.

BOLD IMAGINATION

Drought was the greatest enemy of the people of Wushan in the past. Ninety per cent of the county's area has a topographical feature of mountains, plateaus, hills and valleys. The annual rainfall is less than 500 mm., a pitifully inadequate amount.

Mt. Tungliang is in the middle part of Wushan County. In the old days, like the peasants living in many other mountainous areas the peasants here depended on rainfall for the abundance of their harvests. They worked all the year round and hoped all the year round for rain. Often, heavy, slow-moving clouds raised hopes of rain. Too often the joy was short-lived.

Drought resulted in the people leading a miserable life. Take for instance the 70 families living in Pochiashan Village, high on Mt. Tungliang. Twenty-four of them lived on begging and some went away to other places. Drought made the work of the people much harder. The peasants of Pochiashan, for instance, had to go to the foot of the mountain two or three *li* away for water. The mountain paths were steep and slippery; walking was often very dangerous. The villagers had to spend 10,000 workdays a year procuring water. The lack of water made the life of the people exceedingly harsh. The following folk song shows how the peasants felt:

> The South Mountain is rich and the North Mountain poor.
> The life of the Tungliang peasants is most sad.
> One has to go down the mountain to carry water and make flour.
> Never, therefore, marry your lass to a Pochiashan lad.

This song had been sung by the local peasants for ages. When feeling too depressed, the peasants of Mt. Tungliang, to lighten their hearts, would drift their eager gaze towards Mt. Yunwu in the far south which was blessed with a clear spring. A folk tale current among the peasants of the Tungliang Mountains expressed their feeling of hopelessness. Having pity on the misery of the people, the god Lao Chun Yeh built a water-mill in the middle of the mountain slope and magically made the water run uphill. One day, as the god was going up the mountain, he met a shepherd boy: "Have you seen the water running uphill?" he asked the boy in good humour. The boy did not believe that water could run uphill and, besides, he really had not seen it. Thinking that the old man was playing with him, he said jokingly: "Yes, I did, but it went down again." The god considered the boy ungrateful and thought that he had laboured in vain, and went away in disgust. No water ever came up the mountain though a trace of the legendary water-mill still remains. It had always been the peasants' belief that if Lao Chun Yeh would not make the water go uphill nobody else ever could.

After liberation, the five townships and nine agricultural producers' co-operatives of the Tungliang Mountains area were emancipated from their wretched condition of misery and poverty. But as they were marching towards a happy future the thought constantly haunted them that without water they could never be entirely freed from poverty.

In recent years, the Party committee of Wushan County, to free the peasants for all time from the menace of drought, put forward the slogan: "Let no stream dry up and let all the land on the mountain be irrigated." The old dream of the peasants of Mt. Tungliang was revived and they again looked with interest at Mt. Yunwu. The Niehho River has its source in Mt. Yunwu. Most important is that the upper reaches of the river are higher than Mt. Tungliang. Extending for a distance of more than 40 *li* Mt. Tungliang is connected with Mt. Yunwu at its southern extremity. If a canal was dug and a part of the water of the Niehho River diverted from its source and made to flow in a channel northward around the mountains, then the 30,000-odd *mou* of land on Mt. Tungliang could all be irrigated.

The building of such a canal was a bold idea. To carry out the project was fraught with difficulties. Such a canal, leading the water of Mt. Yunwu to Mt. Tungliang, would have a length of 60 *li*. It would pass 40 gullies, through four forests, and along a cliff face more than 100 metres long. It would have to pass through mountain areas such as Hsunerhyai, Yeñwangpiên, kueimenkuan, Lannitan, etc. Sixty falls and 18 bridges and culverts would have to be built. The building of such a big canal involved many problems. There would have to be, for instance, accurate topographical surveying, data of geological borings at key points, a carefully mapped-out plan, a complete set of designs, a big labour force, and a huge quantity of building materials. Technical experts on water conservancy works were invited to visit the place and give their opinions. They all thought that even with the above-mentioned requirements fulfilled it would still be very difficult to build the canal. They doubted whether water could be harnessed to serve the purpose of irrigation on a mountain with such a high degree of incline. They even quoted a ditty, not without some humour:

Water is like a fierce, darting dragon
Downward is always the course of its flow.
If once it is out of control
A hole it would make in a single blow.

A MAGIC FORMULA

Let us now see what Wushan County had, to justify its determination to build the canal: (a) the hope of the masses, (b) two heads of the water conservancy section who had no education in the science of water conservancy, (c) a level—and Mt. Yunwu—that's all! To build the canal or not to build it — that was the question. The county Party committee decided on the former, that is to say, they decided to lead the peasants to build the canal. This decision was a bold one and made with a revolutionary spirit. It was a decision which stemmed from their sympathy with the misery of the peasants, their sense of responsibility for improving the people's conditions of life, their confidence in the people's power and wisdom, and their realization of the fact that they were backed by legions of happy, emancipated peasants. These things from which the decision stemmed were the material out of which the canal was to be built. The county Party committee entrusted the task of building the canal to the two section heads. They gave them neither money nor materials. They gave them, however, a magic formula: "Whenever there are difficulties, go to the masses for help."

Neither Wang Chien, head of the section, nor Li Hua, his deputy, had had any education in water conservancy. "Oh, it's him!" said the peasants of Mt. Tungliang when they saw Li Hua. "We know him — he used to reap wheat with us." Then they added inquiringly: "But now he must be very learned?" But Li Hua was not learned. The only thing he could do was to use a level and do the simple work of topographical surveying.

The first thing Wang Chien and Li Hua did was to mark out the route of the canal. Li Hua and several others, carrying the level, travelled all over Mt. Tungliang. They made a measurement here and had a look there. Frequently Li Hua would set up his level on the mountain slope facing Mt. Tungliang and station some people on the prospective route of the canal. Red flags would be waved and whistles blown. At a signal a post would be planted. Believe it or not, the 60 *li* of canal route was surveyed in two days. But the peasants did not believe that water could be made to "go uphill" — as they insisted on referring to the round-the-mountains channel. It was necessary to make them believe it, because unless they did, it would be impossible to turn their energy and resources to full account. Here Wang Chien and Li Hua remembered the magic formula: "Go to the masses for help." So they got together many old peasants, took them to see the canal route, and asked them to express their opinions. The old peasants made measurements with the handle of their hoes here and there. Some of them ran to and fro on the mountain slope and made eye measurements. Some rigged up tripods and, pressing their body against them, made various kinds of gestures. All the methods they used were very primitive. When they had travelled along the route from Mt. Tungliang to Mt. Yunwu, they all agreed that it was possible to make the water "go uphill." The order of "start!" was given, and 1,500 peasants began to work on the first section of the canal which was 18 *li* long. It took altogether only five days to mark out the route of the canal and train cadres for the work of construction.

The beginning of construction was really the beginning of a struggle against difficulties. A technical difficulty lurked in almost every step of their work. But no difficulty was so great that the peasants could not solve it. Indeed, the peasants solved the difficulties as easily as they dug the earth. But the overcoming of each difficulty involved a creative effort. The building of the

Tungliang Canal was really a series of such creative efforts.

When the embankment of the canal intake was being built there was no concrete, only stones being available. Wang Chien asked the peasants what should be done. The peasants told him not to worry. They put earth containing grass between the stone blocks. When these pads of earth were watered, grass grew out of the crevices, forming a green blanket covering the face of the stones, thus holding them tightly together. When the channels and falls were built, the peasants even did away with the earth containing grass and used plain stone blocks. They called the first method of laying the stones the "grass earth" method and the second method the "simple" method.

THE MASSES ARE RESOURCEFUL

As work went on, the course of the canal was stopped by a gully 42 metres in breadth and 22 metres in depth. It would take too much earth to fill and, besides, there wasn't so much earth at hand. A bridge built across it would require the use of ferro-concrete which they did not have; and, besides, nobody knew how to design it. Wang Chien got together 23 carpenters and handed them the problem. After a lengthy discussion they failed to produce any workable plan. "I've given you the task, and it's up to you to think out a method." Saying this, Wang Chien went away.

Lin Man-hsu, an old carpenter, was especially worried. While engrossed in deep thought he wandered aimlessly for a distance of scores of *li*. He happened to come to a steel railway bridge. Standing beside it a bright idea came to his mind. He at once returned to the work site. In the evening he told his fellow-workers his plan of building a wooden bridge across the gully after the style of the railway bridge, the difference being the use of wood instead of steel. "The railway bridge has only one tier," said his fellow-workers, "and we haven't got wooden posts of such a great length." "Three tiers then," said Lin. A design of the wooden bridge was soon drawn. With the collective effort of the carpenters a big wooden bridge was finally built, and the water passes over through a wooden trough. The entire structure cost only 2,000 yuan. Had the bridge been a ferro-concrete one, 200,000 yuan would not have been too high an estimate.

The peasants created devices as they worked. At a steep cliff the peasants worked in mid-air, being suspended with a rope let down from the top of the precipice. Picks were so worn down that only 4 or 5 inches of their 2-foot heads was left. When the workers had no more tools they went home for more. At night, they would light torches so as to enable them to continue their work. This made the construction site look like the business centre of a city. Somebody said that one trunk canal could not irrigate all the fields. So the peasants dug branch canals. As these branches all ran downwards, the peasants called it the "horse-mane" method of building canals. Someone else said that, as the canal was long and the number of villages using water many, there was danger of a difference in the amount of water distribution; that the villages in the upper part of the mountain slope would get more water than those in the lower part. Furthermore, if there should be a break in the canal, the water coming down into the fields, having no place for a retreat, was likely to damage the fields. The problem of impounding and diverting water thus arose. After discussion, the peasants decided to build ponds on both sides of the canal which could both impound and divert the water. Two hundred such ponds were then built. As the canal and ponds looked like a vine with melons, so the peasants called it the "vine-and-melon" method of building canals. Altogether, more than 100,000 work-days were spent by the peasants and 300,000 cubic metres of earthwork done. Tens of new techniques were evolved. The Tungliang Canal was built by the peasants without asking the government for a single cent.

A DAY OF GREAT JOY

The day when water first flowed in the canal was a day of great joy for all the Tungliang villagers. It took 11 hours for the water to travel from one end of the canal in Mt. Yunwu to the other in Mt. Tungliang. As the water passed through the villages the peasants said cheerfully: "Not even Lao Chun Yeh could make the water 'go uphill' and now the Communist Party has done it!" Children went into the water and played in it for hours. Young women paddled in it in quiet places. Old men, supported on staffs, came to see the canal. They said that they had never seen such a sight in their lives. Not long after the fields of Pochiashan were irrigated by water of the canal, eight maidens of the Niehho River valley were married to young men of Pochiashan and some more were fixing their wedding days. A new water-mill was built in Pochiashan. On the door was the following couplet:

A new water-mill has been built which will last for a thousand years.
The water has come uphill and there will be good harvests for ever.

This couplet shows how happy the Tungliang villagers are and what they think of their future. Several hundred *mou* of land were irrigated in 1956 when the entire canal had not yet been completed, and all the irrigated land yielded good harvests. The peasants of Pochiashan planted hemp for the first time in the history of their community. The amount of production was 150 catties a *mou*, equivalent in value to 1,000 catties of wheat. Wang Shu, one of the peasants, had never before reaped squashes more than 35 catties apiece, but after irrigation he reaped a squash weighing 75 catties. The peasants of Mt. Tungliang have planned to irrigate 30,000 *mou* of their land. If each *mou* should yield 50 catties more grain, a very modest estimate, then the total increase will be 1,500,000 catties. Furthermore they plan to utilize the water of the falls to set up small power stations to supply electricity for lighting and mechanical purposes. Reeds will be planted in the canals and ponds. They will serve to protect the canals and ponds and can also be used for making mats. The ponds will also be used for raising ducks and fish, which will further increase the income of the peasants. The plan has already been put into practice. Thus the hitherto dry and bald Mt. Tungliang will become a huge verdant mass with rich growth of trees and grass.

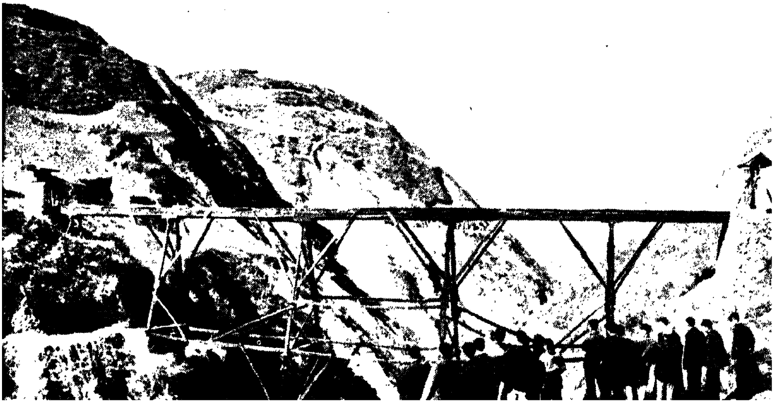
The news of the building of the Tungliang Canal soon reached all parts of Kansu Province. It has been visited by cadres and peasants of many counties. Cadres from leading government organs of the province visited the canal to sum up the experience gained in building it. So did many experts on water conservancy work. The Tungliang Canal has become a school. It teaches the cadres to have confidence in their ability to lead the peasants to fight against drought. It teaches the peasants to see their own strength and to have no fear in fighting against nature. It teaches the technical personnel of water conservancy to rely on the masses in building water conservancy works.

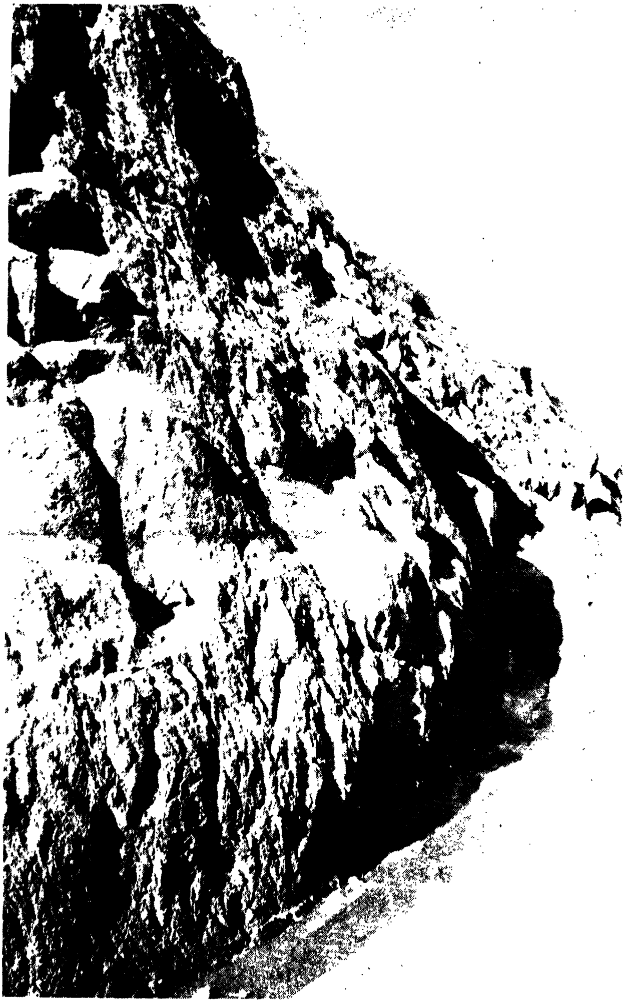
In 1957, 13 canals after the style of the Tungliang Canal were built in the Tienshui Special Administrative Region alone. A canal, known as the Peiliang Canal, built by the peasants of Wushan and Kanku counties, has a length of 200 *li*. The course of the canal passes a gully with a depth of 120 metres and width of 100 metres. Several million workdays were spent in building the canal. But the peasants did not ask the government for any help either in money or in manpower. The surveyor was still Li Hua and the man who built the bridge across the gully was still Lin Man-hsu. The money and manpower still came from the peasants themselves. Seventy thousand peasants of the two counties braved severe cold and took part in the work of digging the canal which began in the winter of 1957.

The model of the Tungliang Canal has given inspiration to many counties in the province. At present more than 30 big canals have begun construction. The Tungliang Canal has blazed a road for the excavation of canals in mountainous regions. It has written a glorious page in the history of water conservancy in China. Its name will for ever be a symbol of great human endeavour in man's fight against nature.

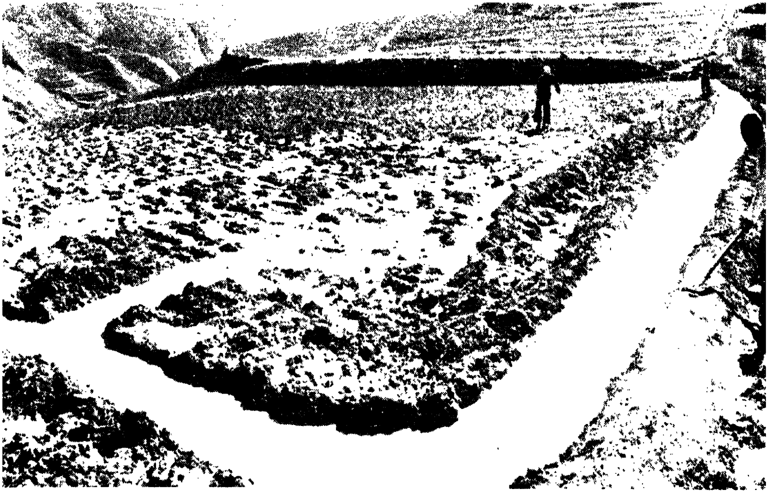
Peasants of the Tungliang Mountains set out to work on the main canal that will bring water from the Niehho River to their hillside fields

Aqueducts like this carry the water from mountain to mountain





At this point the canal had to be taken through a tunnel



Life-giving water irrigates a hillside plot

The effort was worth it — this pumpkin weighs 73 catties!

RAINS NO LONGER DECISIVE FACTOR FOR CROP YIELDS

Chang Wen-ching

NINE OUT OF TEN HARVESTS WERE FAILURES

Laipin, a county in the Chuang Autonomous Region in Kwangsi, was hit by drought in nine out of each ten years, and suffered crop failures in each of those drought-stricken periods. More than 70 per cent of the 410,000 inhabitants of the county are Chuangs. Farmland in Laipin was about 1,310,000 *mou*, and arable land which could be reclaimed, about 1,700,000 *mou*.

In pre-liberation days of the 130,000 *mou* of paddy fields only 50,000 *mou* were sure of crop yields. The distribution of rainfall in the year was uneven. The popular rhyme well described it:

> There are clouds over the sky in spring, but no rain.
> In summer, the heavy downpour brings floods from
> the mountains.
> Dear as gold are rains in autumn,
> And in winter the sky is always cloudless.

There were not only shortage of water for irrigation, but tremendous difficulties of water supply for the peasants and their cattle in two-fifths of the villages. In general, in such villages the same water served four uses: In the morning it was used for face-washing; in the evening, for bathing; then to wash clothes; and, finally, it served the cattle and sheep.

And what of villages which had access to the source of water? It is well illustrated in a popular couplet:

> The water for cooking gruel is thick with liquid mud,
> Which can change white clothes to yellow like magic.

The inhabitants of the surrounding counties composed the following satirical verse:

> Marry not your daughters to the boys of Laipin,
> Where to carry water is as hard as to go to Heaven.
> You find no place to wash your clothes,
> And the drinking water is as bitter as medicine.

In addition to the shortage of water, the land was poor. The yield of crops was naturally very low. In 1952, a year of plentiful rainfall, the grain output per *mou* was only 146 catties. In 1956, after the organization of co-operatives, although the yield per *mou* went up, it reached only 238 catties.

Before liberation yields were much lower and the peasants lived a very hard life. Generally speaking, the peasants ate wild vegetables for breakfast, and gruel for lunch and supper. Rice was so scanty in the gruel that, as they put it, "you can see the shadow of the moon in the rice bowl."

At that time they depended mainly on three, sometimes four things to keep on living: first, rain; second, collect firewood to make charcoal; third, employment as farm labourers; and, failing success with the foregoing three, leave the village and go to the towns or cities and seek employment.

The wanton felling of the forests on the mountains was the cause of the floods and droughts. If no rain fell for five days the fields parched and cracked. If it did not rain for two weeks, drought resulted. In case of heavy rain, there were floods everywhere; and when the rains stopped, the mountains and fields would dry up again.

The destitution of the people coupled with the impure water supplies turned Laipin into a hotbed of pestilence. Malaria, measles, dysentery and diarrhoea were always present. The health of the local inhabitants was seriously affected. That was why the people of Laipin used to complain:

> Droughts made the people sad enough;
> But who knows the suffering of disease?
> Their endless tears could well suffice
> To fill a pond big enough to breed fish.

After liberation the people's life was much improved, due to the land reform and adoption of various measures for increasing production. But the poverty of the peasants was not fundamentally cast off. The people still had to depend on three things to continue living: (1) government supply of grain; (2) government relief loans; and (3) loans from the banks.

But is Laipin County really a barren region? The answer is "No." Laipin is, in fact, a place with many merits. Located in the subtropical zone, it is practically free of frosts all the year round. The average annual rainfall of 1,300 mm. is very good, sufficient to allow of two or three crops being harvested each year. Thus the root-cause of Laipin's poverty was not the want of water but its conservation. If drought is removed, Laipin can be as verdant, fertile and productive as other parts of the country. The measures necessary to combat drought and cure the poverty of Laipin were, therefore, to fight the droughts by conserving water and developing irrigation, and to prevent erosion by afforestation.

DRAGON KING[1] NO LONGER WANTED

In 1956, agricultural co-operation was carried out in Laipin. Instead of relying on the government supply of grain and loans, the peasants pinned their hopes on (1) the Party's leadership and their own exertions; (2) the construction of water conservancy works to defeat drought; and (3) the co-operatives for collective farming.

In the same year, a widespread movement to construct irrigation works was carried out. In areas where irrigation works were developed improvements were quickly noted. However, despite this, during the second half of 1956 and the first half of 1957 an unhealthy tendency made its appearance. People with backward thoughts described the construction of irrigation works as a "reckless advance"; as "development of the collective interest at the expense of the individual"; as "ignoring the side-occupations of the co-op members"; and as "excessive effort spent on irrigation."

These backward views were so strong at that time that they were not completely checked and corrected. As a result there was a decrease of irrigation work in 1957 compared with 1956.

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[1] According to ancient Chinese legend, dragon is a sacred creature, and the Dragon King is the leader of the dragon family who can summon the cloud and cause rain.

What was the way to follow? To improve the production of the co-ops by water conservancy or to concentrate on side-occupations at the expense of irrigation? The contrast of the peasants' lives between 1956 and 1957 provided a profound lesson.

After the circulation of the policies stressed at the Third Plenary Session of the Central Committee of the Communist Party, and after exposure of and discussion on the contrast between 1956 and 1957, a widespread movement for large-scale construction of irrigation was resumed in Laipin in the winter of 1957 and the spring of 1958. More than 150,000 people — 80 per cent of the labour power of the county — threw themselves into the movement.

After four months of struggle the works built, large and small, were able to irrigate more than 780,000 *mou* of land, 15 times as many as the irrigation works constructed in the thousands of years before liberation, and, again, three times as many as those built in the eight years since liberation. All told, 14,400,000 workdays were spent, averaging 90 for each worker who took part in the project.

In concrete terms, they dammed 28 rivers, blocked up 149 mountain streams, built 177 reservoirs, and excavated over 360 sources of subterranean water.

These irrigation works had already shown their effects in the first half of 1958. There was not a single drop of rain from spring to the summer solstice; 28 of the 36 tributaries of the Hungshui River in Laipin dried up. In spite of the unprecedented spring drought, in response to the mass movement of fighting drought, rice seedlings were planted on 250,000 *mou* by the end of April. This was more than twice the area planted in the corresponding period of the previous year. No wonder the peasants sang with pride:

> When droughts happened in the past we implored the Dragon King.
> The more we invoked the yellower grew the rice stalks.
> Now, with the completion of the huge reservoirs,
> The fields are full of water and the barns overflowing with rice.

RELY ON THE MASSES' ENTHUSIASM

To expose the falsehood of the Rightist, conservative views through debates was the preliminary step taken in carrying out the large-scale construction of irrigation works between the winter of 1957 and the spring of 1958. Everyone gave lip-service to the building of irrigation works so as to fight drought, transform nature and eventually push crop yields up to 800 catties per *mou*. But in actual fact it did not mean that everyone really knew the significance of the movement. In this matter, some of the village cadres were like the peasants.

At the inception of the movement, six of the 15 district Party secretaries of the county were lukewarm, thinking that there were no waters to harness. Laipin, they reasoned, had only bare mountains and deep rivers; its complicated strata had no water source; and the best way was to depend on rain.

Some of the peasants lacked confidence in the movement for other reasons: The irrigation works which were easy to build had been completed; those to be constructed would be difficult ones; the work could not be carried out unless they were provided with funds and technical personnel. "It's true that we should not rely upon Heaven," they said, "but we can do nothing without money. Apart from leadership, we need also technicians."

Only a small number gave their enthusiastic support to the movement and they were nicknamed "water conservancy cranks." The cadres in charge of water conservancy expressed even more serious conservative thoughts. The people of Tawan District, for example, proposed to build reservoirs at nine places, but the cadres in charge cancelled seven, accusing them of being "too rash."

To fight such conservative ideas and practices, the county Party committee promptly held debates and organized visits so as to help the cadres and masses remove their erroneous ways of thinking and to stir up their enthusiasm. After visits to Tawan and Kuhsi districts where irrigation work was well done, the peasants reached the following conclusion in the wake of a series of debates: Wherever there are hills there must be water; if there is no surface water there must be subterranean water; if there is no ready water, rain-water can be collected and stored; if there is no water nearby, there must be water in distant places.

In fact, Laipin had 36 rivers whose water could be turned to good account, in addition to abundant underground water. During the movement for fighting drought and planting rice seedlings in the spring of 1958, 360 underground water sources were found in one month, which proved sufficient to irrigate more than 70,000 *mou.*

Following the general debate, the peasants put forward these bold and ambitious slogans: To impound the waters in the rivers; to dig out the underground waters; to collect and store the rain-water; and to confine the mountain torrents.

After the cadres and peasants came to know that lots of conservation work was possible, the county Party committee proceeded to the next problem — to wash out the cadres' and masses' doubts and misunderstanding in carrying out the Party's water conservancy policy that the co-operatives should undertake the construction themselves with government assistance; should rely on the masses to achieve greater, faster, better and more economical results. The peasants had much better understanding of the policy after they were shown clearly the crop losses which resulted from droughts, the increase of output which came from added irrigation works, and the past suffering which drought and lack of water conservancy had brought to the people.

An 80-year-old peasant of Tawan District was moved to say: "The sufferings of the past were endless. We used to desert our land and sell our children, and nobody cared. But Chairman Mao now calls for the construction of irrigation works, and the Communist Party leads us to get rid of the root of our poverty."

Calculations were made as to how much money was needed for the irrigation projects. The result was that only a small amount of cement and steel bars had to be purchased, while most materials and means of transport (rocks, earth, lime, wheelbarrows, baskets, etc.) could be provided by the peasants themselves.

In the past the construction of irrigation works cost 20 yuan per *mou*. Money had to be provided for the purchase of practically everything. Should that method be continued not even ten years' efforts could bring droughts under control. For this reason it was decided that each one should bring tools with him to work; that he should produce the lime needed; that he should hew rocks, carry earth, collect funds and learn technique all by himself.

On that basis, one *mou* of irrigation works cost less than 1.2 yuan. The emancipation of thought led to a vigorous campaign for irrigation construction. At the inaugural mass meeting the peasants pledged that "under the leadership of Chairman Mao, with the collective efforts of the co-operatives, and with our own hands, we will force the rivers to change their course and compel the mountains to give way. If there is no rain, we'll not be affected, for, after the construction of irrigation works, bumper harvests will last for thousands of years."

AN ALL-OUT WAR ON DROUGHT

Main effort in directing the campaign was to mobilize the people; leading cadres were requested to take the lead in actual work. Both cadres and masses were encouraged to be bold in thought and action. All potentialities were to be tapped and all manpower and material resources utilized, in order to dam the rivers, block the mountain streams, dig ponds, build reservoirs and cut canals.

Leading cadres at various levels, side by side with the peasants, carried food on their backs and climbed the mountains to seek water sources. When no water source was found in their own township, they went to another township to continue the search. When they failed to find any water source in Laipin, they went to the neighbouring counties. Mao Shou-kao, Party secretary of Sanlien Township, being resolved to settle the problem of irrigation for the township's 3,000 *mou* of land, started off with six determined young men. Carrying baked sweet potato slices, they searched for six days and nights and eventually found the source at a point about 20 *li* away. For his outstanding success the peasants wrote the following eulogy:

> Tens of thousands of peasants praise Mao Shou-kao,
> For he is a hero of socialist construction.
> His revolutionary aspirations are unmatched;
> He has scored merit after merit.

There were many cases like Mao Shou-kao. Liu Yao-hua, head of Linglun Township, passed the door of his family 30 times during the period of building irrigation works but never entered once. He was praised by the local people as the "Modern Emperor Yu."[1]

Quite a few cadres of the county, districts and townships were called "irrigation shock-workers." They always went to places where conditions were most serious and they tackled the problems on the spot. That was why the local people composed the following verse in praise of them:

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[1] Emperor Yu, according to Chinese legend, was a water conservancy expert in ancient China. For eight years he led the people in harnessing the Yellow River during which period he passed his house three times without entering.

The Party members are not afraid of difficulties—
They help dam all the rivers.
We'll no longer entreat the Dragon King for rain,
And in case of heavy rain, we won't worry about floods.

In order to provide better leadership for this battle, Party secretaries at all levels came personally to the front to assume leadership in the construction work. Leading cadres moved their offices to the building sites, bringing along their telephones. The sites were literally the command headquarters. Simultaneously with the issuance of directions, the cadres took part in the actual work. They not only tried their hands at moving earth and rocks but also tested the tools and summed up the inventions and innovations of the masses. As soon as the testing of a tool was successful visits were immediately organized and the innovation popularized.

Local Party secretaries endorsed 14 innovations of instruments and reforms of working methods to raise efficiency. These were later developed into 32 reforms including the following measures: to replace excavation of earth by ploughing with oxen instead of by spades; and to transport earth by "sliding baskets" (baskets which can slide from one place to another by means of long wires) instead of by pole and baskets. These steps tremendously increased labour efficiency. At times a single reform raised efficiency tenfold.

When the Spring Festival came, construction work was in full swing. Party secretaries at all levels, county and township heads and office workers all spent the festival period on the job with the masses. During the holidays 30,000 more people worked at the construction sites than on ordinary days.

A CHALLENGE TO YU KUNG[1]

Continuously for four months construction work was vigorously carried on without any relaxation. This was mainly because of the following reasons: The cadres always took the lead in the work; they held debates whenever any ideological trouble cropped up; they conducted discussion meetings as soon as difficulties were encountered; they popularized successful experiences by organizing meetings and visits; and they commended outstanding workers as soon as they came to the fore. Not only co-op members and townsfolk worked at the construction sites, but teachers and students of schools came either to join the work or to tender greetings to the workers.

Thus Party members, government cadres, army units and the people united as one in the battle against drought. As often as not they put forward proposals to help in one way or another as an expression of their devotion for the building of socialism. At the meeting to celebrate the basic completion of the construction work, the masses sang enthusiastically:

Poor are the mountains and short of water, but we're never poor in will.
We're all heroes in transforming nature.
We can match Emperor Yu in controlling floods and fighting drought.
While in moving mountains and filling in gullies, we can challenge Yu Kung.

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[1] According to a time-honoured legend, a 90-year-old man named Yu Kung is said to have attempted to remove two huge mountains that stood opposite his house. The King of Heaven's heart was touched by his perseverance and he sent two celestial beings down to earth to carry the mountains away.

In Laipin County there are now many villages as described below:

> Reservoirs can be seen in the western hills,
> Reservoirs can be seen in the eastern hills.
> Along mountainsides flows the water,
> And everywhere wafts the fragrance of rice and flowers.

WONDERS OF OUR TIMES

Li Ming

MIRACLES AT HANWANG TOWNSHIP

Surveying the surrounding country from the peak of Tawo Mountain in Hanwang Township, Tungshan County, Kiangsu Province, is a feast for the eye. It is a unique landscape painting—the rolling hills basking quietly in the lovely sunshine, the reservoir fenced in by hills, the rippling waters of a maze of ponds, networks of ditches, rows of wells, orderly-terraced hillsides and the countless water-holding pits dotting the hillsides like the scales of a fish.

Looking at these impressive water conservancy works, one is filled with amazement when told that, in pre-liberation days, this same area was a land of destitution and calamities.

Who could remain unmoved when hearing the local people sing this centuries-old lament:

Hanwang, Hanwang, homeland of the poor!
Neither can the hillsides be cultivated, nor the marshes ploughed,
Though we toil all the year round,
We have only wild herbs and grain husks to eat.

Now this folk song is a relic of the past. Look today at the new page of history, inscribed in golden letters by the heroic people.

Hanwang Township is a hilly region with 136 peaks and 120,000 *mou* of land. In the past it was afflicted by natural calamities practically every year. The people were poverty-stricken. Apart from extortion and plunder by the feudal landlords and corrupt officials, natural calamities — flood or drought — so often destroyed the fruit of the peasants' labour for the year.

Of the total area, cultivated hillsides made up 22 per cent, and lakes and swamps, 38 per cent. The unreclaimed hill land accounted for the balance. In autumn, a single downpour could result in sudden floods which would carry away the fertile surface soil on the hillsides, destroy the farmland at the foot of the hills, and turn the marshes and low-lying lands almost overnight into a vast expanse of water. In years of drought, not only did the earth crack and the crops wither, but the peasants had little water for family use. They used to queue in long lines at the wells waiting their turn for a little water. Wang Tien-hua, a 56-year-old peasant, recalled that in 50 years of his memory there had been only three autumn harvests of grain in the marshes and hollows.

Since liberation, tremendous changes have taken place. Following the organization of co-operatives and the construction of water conservancy works under the leadership of the Communist Party and government, preliminary results have been achieved in fighting natural calamities and raising crop yields.

In 1953, more than 1,000 peasants of the township were mustered to build a long embankment in Lake Wangyao. The crops of 2,000 *mou* of fields behind the embankment were thus partially saved from inundation.

In 1954, the peasants undertook to deepen and broaden the Chaho and Yutai rivers for speedier drainage of waters. As a result the area of waterlogged lands dropped from 20,000 *mou* to 10,000 *mou.*

In the spring of 1956 a dam was constructed by the government in four months. The waters confined above the dam formed the Hanwang Reservoir. In the summer of the same year the reservoir, storing 700,000 cubic metres of water, brought the first bumper harvest to Lake Tingtang, an area of 2,000 *mou,* which had never yielded a single crop in the past. During the autumn drought, the waters of the reservoir irrigated more than 3,000 *mou* of wheat. These achievements enormously strengthened the people's confidence that natural calamities could be conquered.

Nevertheless, in spite of water conservancy work over the past few years, drought and waterlogging had not been completely wiped out in Hanwang because of its numerous peaks, complex topography and vast area. In 1957, the autumn drought reduced the grain output of the township by about two million catties.

In New China things like this are not allowed to continue. In 1957, shortly after the revised version of the National Programme for Agricultural Development (1956-1967) was promulgated, an extensive movement for the study of the plan was organized and the peasants' determination for a "big leap forward" in output was heightened. The whole people of the township, under the leadership and with the support of the Party, decided to undertake extensive water conservancy works in the winter of 1957 and the spring of 1958, that drought and flood might be ended once and for all; that the natural conditions of Hanwang Township be completely transformed; and that the people might advance rapidly towards prosperity and happiness.

It was with such a historical background that "miracles" were produced one after another.

NEW DEMANDS FOR WATER CONSERVANCY

The preliminary target of water conservancy works the county Party committee assigned to Hanwang Township for the winter of 1957 was 120,000 cubic metres of earthwork. This target was increased to 230,000 cubic metres after the township cadres returned from an enlarged meeting on water conservancy convocated by the county government. When this figure was passed on to the production teams of 12 co-operatives of the township, the figure was pushed up to 420,000 cubic metres. But this was not the end of growth, for the peasants were not satisfied with water conservancy works in the ordinary sense.

In mid-November 1957, when the water conservancy works to be constructed that winter were not yet started, Lu Tao-kun, member of the Party committee and deputy head of Hanwang Township, and Li Tao-chun, a 17-year-old student assigned to the township for practical training in water conservancy work, went to the Chienhua No. 6 Co-operative to inspect work there. When they arrived at the co-operative the first words they heard were a demand for the construction of a reservoir at Hungshan Ravine. This was posed by Chiang Yuan-chih, head of the first production team. Later they went together to the ravine to make a rough reconnaissance of the topography there.

As the examination was going on Chiang said to Lu: "How nice is the Hanwang Reservoir! The water flows *to anywhere as it is desired. Should we have a reservoir* here, we would no longer worry about crop failures!"

Lu turned towards Li, and asked: "How do you think of it?"

"I should say the topography is perfect," answered Li firmly.

They visited Chienhua No. 9 Co-operative. Cheng Ta-tzu, vice-chairman of the co-operative and an ex-serviceman, was an outspoken person. He made an unequivocal declaration regarding the necessity of the reservoir. Lu asked to see the embanked fields, but Cheng took him to Hankou Ravine to see the topography there instead. The geographical features of the area, where a reservoir was to be constructed, were excellent indeed. Given a dam, the mountains would form a natural wall around the imprisoned waters—a lake with an area of 2.7 square kilometres.

RESERVOIRS, ATTRACTIVE BUT DIFFICULT JOBS

On his way back Lu Tao-kun turned his thoughts to another incident. During his visit to Chienhua No. 1, the co-op members had demanded to build a reservoir at Mashan. The masses seemed more determined than the leadership, Lu meditated, but, attractive as reservoirs were, they were not simple to build. Winter was coming on. How could construction be carried on when the earth was frozen? Besides, big projects needed large sum of money. Even if the Water Conservancy Bureau approved the project, how much money could be obtained? Suppose the needed funds were received, where could they get so many technicians and labourers?

Lu by no means lacked grounds for thinking that way. To build the Hanwang Reservoir, he remembered, the government had invested 68,000 yuan and provided 240,000 catties of grain. In addition, 22 cadres had been transferred to the construction site, and labourers of six townships mobilized. With such tremendous manpower and substantial funds it had taken four months to complete the work. Now, this co-operative wanted reservoirs, and that co-operative wanted reservoirs, but had they ever thought of these problems? In a word, Lu found himself involved in much troubled thought. There were no doubts about the benefits that would flow from the reservoirs, but how to get them started, he wondered.

While the cadres were puzzling about what to do, the co-op farmers held meetings day and night. They discussed practically all problems relating to the project: the plans, manpower, instruments, money and so on. But they went beyond discussion — they found solutions! First of all, there was no difficulty about manpower. Although there were only 1,000 people with labour power in Chienhua No. 1 Co-op virtually all of them would participate in the construction of the reservoir at Mashan. They were not in the least frightened by the difficulties awaiting them. As to materials, stone was practically inexhaustible in the mountains. Naturally, it would take time and labour to break and transport it to the building site. But that was not an insurmountable difficulty. "After all, why should man fear rocks?" Expressions like this were heard over and over again at the meetings.

At the meeting of the management committee of Chienhua No. 9 discussion centred on the question of funds. Some members proposed to sell the locality's rich deposits of yellow sand so that cash could be obtained. Accordingly, the responsible members of the committee started to look for customers, and ultimately made a profitable transaction. They sold 470 cubic metres of yellow sand for 1,760 yuan. This provided enough money to buy equipment like shovels, baskets, etc. and to pay the wages. This proved that the wisdom of the masses was unlimited. All told, more than 200 rationalization proposals were put forward which ensured the projects to be constructed in accordance with the principle of "achieving greater, faster, better and more economical results."

VIGOROUS EXERTIONS

When the demands, proposals and plans of the co-operative members were summed up and reported to the township Party committee, the precedents for building water conservancy works were smashed and the misgivings of the leadership removed. Lu Tao-kun, the committee member in charge of water conservancy, immediately accepted the proposals and drafted a revised plan for the construction of 19 reservoirs. The members of the township Party committee promptly met and discussed the proposal. They made some amendments of the revised project and adopted it.

A preliminary estimate showed that the water conservancy works in Hanwang Township would involve 4,620,000 cubic metres of earthwork, 12 times as much as the figure of the original project. Besides, 10,000 cubic metres of stone had to be shifted in the course of construction.

As soon as the final project was made public the entire township went wild with joy. The first group of 17 reservoirs were promptly started. Words fail to describe the excited scene. Amid a forest of red flags and braving the high winds, tens of thousands of people, old and young and of both sexes, marched to the building site. The mountains and surrounding fields echoed with a multitude of noises — explosion of dynamite blasting the rock, clamour of the workers, rumbling of cars, the sound of picks and shovels, shouting of orders. . . . The militant people of Hanwang Township had fully manifested their tremendous power.

All seventeen reservoirs were built in depressions among the towering mountains. It was hard work lifting the huge rocks and carrying them away — it needed well-organized, collective effort. Rocks too large to move, were blasted with dynamite.

During the first few days the reservoir builders went back home for lunch and supper. As it ate into much time going back and forth, the speed of construction was affected. Later, cooking utensils were brought to the building site and meals were collectively served there. As daylight was very short in winter, the builders kept on working at night.

Before the Spring Festival rain and snow fell on Hanwang. But the builders worked as usual on the construction sites.

Old Li Hsiu-sheng, of Chienhua No. 6, was formerly a poor peasant. He had never seen one good harvest in his life before liberation because of frequent natural calamities. He received a plot of land after land reform and later joined the co-operative. His life improved from year to year. When the construction of the reservoirs started he voluntarily went along with others to the mountains to work every day. He was so active on the building site that he was nicknamed "Old Locomotive."

While construction was in progress, vigorous efforts were made to improve the tools. At the Hankou building site, the earth was turned up with double-share ploughs in place of pick and shovel; stone tampers were replaced by rollers to solidify and harden the ground. With these improvements the efficiency was increased two to three times.

The people of Hanwang also showed a highly collective spirit. Chienhua No. 10 Co-op, for instance, had only 300 households. The reservoir they undertook to build at Chouwo was one to hold more than 500,000 cubic metres of water. Seeing that No. 10 by itself was not likely to complete the reservoir, the cadres and members of Chienhua No. 11 Co-op carried food and tools to Chouwo and rendered their assistance.

The reservoirs at Huyao and Kochenwo had a capacity of 500,000 cubic metres apiece. The projects were beyond the capacity of the co-ops concerned. Then two co-operatives and later four co-operatives worked collectively. Eventually the reservoirs were completed on time.

THE 17-YEAR-OLD TECHNICAL DIRECTOR

When the story is told of the conservancy work of Hanwang, mention must be made of Li Tao-chun the young student. As a rule, before the construction of so many reservoirs, a large group of technicians, including prospectors, surveyors, designers and those in charge of construction, must be organized. But in the township there was only one technician, a young graduate of a water conservancy school assigned there for practical training. This young student had passed with credit in irrigation works at school but had taken few lessons dealing with large-scale water conservancy works.

But could construction be held up for lack of technicians when enthusiasm was at such a pitch? The Party committee decided to follow the mass line and give a free hand to the young student to direct all technical matters.

A Chinese saying goes: "The new-born calf is not afraid of the tiger." Li Tao-chun and Keng Yu-hsin, the latter a cadre of the Water Conservancy Bureau recently assigned to the construction site, boldly accepted the job. They actually attended the entire process of technical work from surveying and designing to construction. They helped 12 co-operatives in training 14 persons of primary school education level to serve as technicians for directing actual construction. In a couple of days Li and Keng visited the 136 peaks of Hanwang Township and found several hundred gullies. They reported the results of their inspection to the peasants and, after meetings of discussion, it was decided to build reservoirs in nineteen ravines including Hungshan Ravine, Hankou Ravine, Kochenwo, Mashantou and Huyao. As soon as prospecting of a site was finished survey was immediately carried out and construction started. The streamlined method that prospecting, surveying, designing and construction were simultaneously carried on greatly speeded up the tempo of construction. It took only two weeks from the time the proposal was first put forward to the completion of all the preparatory measures needed for construction. In the past, to design reservoirs of large size in such a short time would have been beyond imagination.

COMPLETED WITHOUT GOVERNMENT AID

In the brief time of three months before and after the Spring Festival the first 17 reservoirs were completed. Aside from the wonderful speed of construction, not a single yuan was asked of the government. The problem of funds was solved either through reduced expenses or local collections. Hsiaohuyao Reservoir, for example, was originally planned to be built with government funds, and to be started in the spring of 1958. But it was constructed by the peasants of Chienhua No. 2 and No. 3 Co-operatives and completed ahead of schedule. The government appropriated a subsidy of 10,000 yuan for the construction work, of which not a single yuan was spent.

AN IRRIGATION NETWORK

Construction of reservoirs was only one aspect of the water conservancy. To make full use of the water confined, an all-round and comprehensive project was indispensable. Thus, in addition to the construction of the 19 big reservoirs, the people of Hanwang Township turned their attention to the experience of the Chuhsing Co-operative in Suining County. In that co-operative, the ponds and ditches were linked so that both the capacity for holding water and the irrigated area expanded.

It was Kao Hua-hsiang, chairman of Chienhua No. 1 who first learned this advanced experience at a provincial meeting in February 1958. After he came back to the co-operative he immediately called a meeting and discussed the matter with members. They said that it was good to have the reservoir but they had so far neither ditches nor ponds. Why shouldn't they start to build them just like Chuhsing?

A forum was immediately held and all experienced peasants invited to attend. The result of the meeting was a decision to dig ditches across the slopes and at the foot of the mountains and connect them with each other. Chienhua No. 1 already had 19 ponds; five new ones were being added. Of the 24, a group of nine was linked so that water could flow into each one. The remaining 15 still had to be connected. All ponds were connected with the ditches. By this measure all water running down the mountain could be directed to the ponds. The total storage of the 24 ponds was 190,000 cubic metres. In order to facilitate the irrigation 30 wells were sunk along the Yutai River.

The measures of Chienhua No. 1 quickly spread to the whole area. At present 258 ditches had been dug and more than 500 ponds created by damming the gullies, giving the township an additional capacity of storage of 5,000,000 cubic metres.

SIX MILLION "SCALE PITS"

But this was not the end of the water conservancy projects. There was a saying popular in Hanwang Township: "Water comes from above — all efforts are in vain if the upper part is not regulated."

As Hanwang Township had many mountains, if the rushing waters were allowed to come down unchecked after each heavy rain, not only the surface soil of the mountain-sides would be carried away, but the reservoirs themselves would be silted up and their capacity of storage reduced from year to year.

In January 1958 Liang Kung-fu, Deputy Commissioner of the Hsuchow Special Administrative Region, pointed out this problem during his inspection tour of Hanwang. He introduced to them Shansi's experience of building terraced land, "scale pits" (so named because the numerous pits sunk on the hills bear a fancied resemblance to the scales of a fish) and afforestation. This immediately reminded the old peasants of the township of similar practices in the past. Wang Cheng-hsiu, an old peasant of Chienhua No. 2 Co-op, recalled that a poor and landless peasant named Chang Yung-fu had sunk shallow pits on the mountain and planted crops inside.

In the rainy season such pits could store water for use in the dry seasons and retain the soil. Besides, the heavy rush of water could be slowed up and the terraced fields saved from destruction.

After discussion of this particular system, the cadres and peasants decided that it was helpful and practicable. They promptly mobilized Chienhua No. 2 to terrace its land and dig "scale pits" to serve as example. Then visits were organized so that other co-operatives could carry out the practice. In consequence, within 18 days after the visits, 600,000 depressions were dug. At the time of writing this article two million of these shallow pits had been completed. It was planned that six million, all told, would be excavated on the 136 hills and mountains in the area. The co-operative farmers were confident of fulfilling this task before the Pure and Bright Festival (around April 5). In addition, the people of the township decided to terrace the 24,000 *mou* of hillsides of Hanwang and in a short time.

Whenever the pits mentioned in Hanwang, local people would tell of their numerous merits. The reason was that such pits, apart from conserving soil and water as well as preventing the washing-away of soil, could be planted with trees like walnuts, chestnuts, poplars, willows, and pines. It was also planned to plant in each depression three plants of sweet potatoes or six plants of pumpkins. Should sweet potatoes be raised, the output could reach 20 million catties; and if pumpkins were planted, 200 million catties. This represented a tremendous source of wealth that should not be neglected.

Afforestation was also vigorously carried out. The peasants of Hanwang not only planted ten million trees in one month, which would in the main clothe the township with greenery, but planted red roses in hundreds of thousands pits on Wangshan Mountain, Tsou Mountain and many barren hills. Should one visit the mountains of Hanwang a couple of years hence he would see the beautiful flowers and smell their fragrance.

1,000 CATTIES PER *MOU*: HANWANG'S GRAIN TARGET

After the Spring Festival many people of other townships came to Hanwang to visit its conservancy and irrigation works. An exhibition room was specially opened beside the Hanwang Reservoir in which many charts and models were displayed.

On completion of all the water conservancy works in Hanwang, the destructive mountain torrents and the droughts will be ended once and for all, the barren hills will be turned into fertile farmland, and the 57,000 *mou* of dry land on the plain be turned to irrigated land and paddy fields. Bumper harvests will be ensured for rice, wheat, beans and other grain crops. They have decided to raise the yield of grain to 1,000 catties a *mou*. The poverty-stricken life of the people in Hanwang will be gone for ever. The confidence of the local people is well expressed in this song:

> Hanwang is a fertile place:
> All lands grow rice and wheat;
> The mountains are scented with the fragrance of flowers and fruits.
> This year it can well beat provinces south of the Yangtse
> And the land of paddy rice, Soochow and Hangchow!

LEADING WATER AROUND THE MOUNTAINS

Yeh Sheng-tao

Before we started on our inspection trip, I had heard of the large water channel being constructed in Cholu County, Hopei Province, which cuts along the mountains. I could not envisage such a channel nor how it was built. But now I was seeing the actual work in progress at Cholu and a similar water channel under construction at Heishih Dam in Changchiakou.

Cholu water channel is built on the mountain-side just like a highway. In building a highway, cliffs blocking the route have to be removed and creeks bridged. It is same with the building of this aqueduct except that the highway may have slopes but the channel must be on about the same level, with just sufficient fall to ensure the flow of water.

It is necessary to build the water channel along the mountain-side because the higher dry land cannot be irrigated by rivers lying at levels so far below them. There are two ways of using water from a river for such high land. One is by utilizing mechanical power to lift it to the area to be irrigated; the other is by drawing water from the river's upper reaches which are at a high elevation, leading the water into a channel at the height of the land to be irrigated.

The big water channel in Cholu starts at the north-western part of the county, taking water from a section of the Sangkan River where its water level is about the height of the upland fields to be irrigated. It winds its way along the Huangyang Mountain from west to east and north-east, extending 80 *li*. The construction involves the cutting away of 22 cliffs, seven of which exceed 10 metres. The work at Fenghuang Mountain is the most difficult, as cliffs have to be tunnelled to carry the channel through. These tunnels are four metres high, two metres wide and 40 metres long. Then, 50 creeks have to be bridged, two of which represent a depth of 23 metres. The job at Lichiaketa is as difficult where the crossing of a creek requires earthwork 23 metres deep on a base of 84 metres and a surface of 40 by 80 metres. The whole project involves 1,100,000 cubic metres of stone, earth and sand work — cutting, filling and dynamiting.

When the channel is completed, the 35,000 *mou* of dry land in 33 villages on the Huangyang Mountain will be changed into water land — irrigated all the year round. The great potentialities of these parched fields will then be developed to the full.

The peasants in the locality had long dreamed of drawing water into a channel to irrigate their dry land. Thirty years ago, two peasants, Kuo Chuan-chu and Sung Wan-chin, first suggested that a water channel be built. They received popular support, particularly from the poorer peasants. But the then reactionary government would not lift a finger. Some influential men who were despots in the locality raised obstacles to the peasants' plan for purely selfish reasons. The beautiful dream of thousands of peasants was smashed.

After liberation, Kuo and Sung, in association with other peasants, took the initiative of prospecting four times for a route over which to bring water to the area. Then they forwarded a long letter to the People's Government requesting that a channel be built. In 1951 the Communist Party and Government dispatched personnel to examine the proposed route. After careful study and deliberation, it was considered that the time was not ripe for undertaking such a big project. At that time the peasants were working the land on an individual basis and conditions were such as to make it difficult to start construction of a water channel on a big scale. However, help was rendered to the peasants by the building of a number of medium and small-sized channels and making use of rain-water from the mountains. These undertakings, though not large, proved useful. This was evidenced in 1957 when, although a serious natural calamity affected Cholu County, 28 out of 33 agricultural co-ops in 33 villages in the Huangyang Mountain area had a surplus of grain and two co-ops were self-supporting.

But watering land by rain-water from the mountains depends on rainfall. Without rain, sowing and reaping cannot be ensured. So the peasants still hoped that a water channel going around the mountains would be built. In the autumn of 1957, after the Party and the State Council had issued directives on building water conservancy works on a large scale, the peasants again made a request for the building of the channel. The Party county committee and the county people's council made an intensive study of the question. They considered such a project as of great importance. Moreover, in light of the progress made in agricultural co-operation, the peasants, as a collective body, were now capable of undertaking the construction of the much-needed water channel. A decision was, therefore, reached that the county authorities should lead the peasant masses to proceed with the work. In December 1957 a surveying team was dispatched to explore the route for the proposed channel.

As soon as Kuo Chuan-chu heard of the news, he joined the surveying team and volunteered as a guide. He and the team worked hard all through the bitter winter. In 63 days they carried out 10 surveys before they decided on a route. On March 16, 1958, construction began.

* * *

On May 29, our inspection party arrived at the construction site of Lichiaketa. We were given a hearty reception by the channel builders who came to welcome us with gongs and drums and hand clapping. Among them were three old men. Kuo Chuan-chu was one of the three. Sixty-three years old, of medium height, and fairly strong, he wore a red arm-band — he was a committee member and chief inspector.

We had heard before how, for 30 years, he had entertained his cherished desire to build a water channel. Now we heard how he had inspired the young people by his example of working earnestly on the project and of his tireless efforts in explaining to the peasants the significance of the undertaking. As I was face to face with this man, many thoughts crowded into my head. "This old peasant must be exceedingly happy," I decided. "Today a 30-year dream has come true."

The other two were brothers, Liu Tsun-man and Liu Tsun-kuei, 67 and 63 years old respectively. Both were skilled in masonry and many other crafts. When the channel work began, they asked for permission to join. The agricultural co-op to which they belonged did not allow them to go because the co-op badly needed their knowledge and technique in sowing. Later, however, as the young channel builders came up against difficulties in stonework which might possibly delay the completion of the job on schedule, they asked for help from the two experienced elders. The Liu brothers answered the call immediately. Their arrival changed the situation and the difficulty was soon overcome. The amount of stonework they accounted for equalled the loads carried by a dozen persons.

Liu Tsun-man and Liu Tsun-kuei were at the same time friends and inspirers of the young workers. They were always the first to take up any job; were willing to do more than the others, and helped others without reserve. From their personal experience, they talked with the young people about the good things of the new society compared with the old. When the young people sang, they sang with them. Exposure to cold and as a result of heavy stonework, their fingers became stiff and swollen and developed deep, painful cracks. But they held on with their job, which they knew was urgent, and refused to rest for treatment. Their sincerity and earnestness moved everybody who came in contact with them.

Stories can be told of many other model workers we met. They are equally inspiring.

* * *

At the open-air meeting held while we were there the workers came amidst singing which resounded over the slopes and gullies. Addressing the channel builders Kuo

Mo-jo, the famous poet and historian, spoke what everybody felt at heart. "We have come here," he said, "to take you as our teachers. We who use the pen must adopt your working zeal so that our pen will be like your spade, developing ever greater power and exercising ever greater influence."

The meeting was short but impressive. Animation and satisfaction was on everybody's face.

No time was lost in resuming work — digging, carrying and dumping the earth down the slopes. Many workers carried in one trip, not two baskets but four — two on each end of the pole. In the gullies, groups of men were tamping the earth with big disks. The ground was already levelled like a sports field. But in order to make it more solid, tamping continued. Red strips on wires hung high overhead showed the level to which earth had to be piled and tamped. This was to carry the water channel.

We were informed that more than 2,000 people were working on the entire length of the construction. They came from 47 villages, of which 14 received no direct benefit from the undertaking. Yet the co-op members from those 14 villages worked just as hard and enthusiastically as those from the 33 beneficiary villages. I thought with pride that today the Chinese people regard all kinds of labour as voluntary labour, and realize that by taking part in different kinds of voluntary labour they are really working for themselves. Today, group interest and individual interest are not mixed, but merge. The enthusiasm of the co-op members from the 14 villages taking part in building this long, cross-mountain aqueduct grows out of such spirit and understanding.

After my inspection trip to Cholu, I wrote a poem. This is its substance:

A trip to Cholu does not make me recall its antiquity,
Because there was no mountain-cutting water channel in ancient times.
The Sangkan River will traverse the mountain-side
To tread the socialist road.
Thirty-three villages will benefit from the channel;
Yet forty-seven villages send their folk to work.
Your benefit is also ours;
Today we all know why.
Old Kuo Chuan-chu will live to see his dream-channel complete;
Yang Kuang-jung refuses to go home until he sees water flow;
The Liu brothers are skilled in masonry;
Chang Yu inspires the workers to greater efforts.
So many heroes with so much zeal,
Will surely build the channel before schedule.
Thirsty slopes will drink their fill,
Rich harvests will be reaped, year after year.

COMMUNIST SPIRIT OF THE COLLECTIVE FARMERS

Yuan Mu and Teng Tse-chang

The check dam of the Huaijou Reservoir[1] has risen between two mountains, and blue water is now rippling in its artificial lake framed in the greenery of the surrounding hills.

"The huge 'flood-making' dragon has been locked up by the 60,000 heroic reservoir builders" — this is how people describe the triumphant conclusion of the project. After a hundred days and nights of hard work, the peasant masses realized their ambitious plan. This is big news of the completion of an important project; but, what is more significant, it is big news of the growth of the communist spirit among the collective farmers.

Builders of the Huaijou Reservoir, 60,000 all told, came from 3,477 agricultural co-ops in 12 counties and districts, only half of them being directly or indirectly benefited by the project. The peasants came to do their share for socialism, climbing mountains and crossing rivers, bringing with them their tools and daily necessities, and living in tents they put up themselves. They worked day and night and in all weathers, in the hope of finishing the project with the least loss of time.

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[1] The Huaijou Reservoir is a big project built in Huaijou County, near Peking, involving a total of 2.09 million cubic metres of earth and stone work. Controlling an area of 540 square kilometres, it is capable of storing 100 million cubic metres of water and can irrigate one million *mou* of land.

FOR THE EARLY COMPLETION OF THE RESERVOIR

From Kuan County, three hundred *li* away, came 1,600 able-bodied peasants on foot. They were selected from among those who had volunteered to work for the Huaijou Reservoir, though the project had nothing to do with them at all. Chao Teh-chung, a peasant in his fifties, evaded the medical check-up by hiding himself under a cart, because he feared that the leadership would not allow him to go on account of his age. When the working brigade set out on its journey to Huaijou, he joined it stealthily, luggage roll on shoulder. On the construction site he worked with the same zeal as the young men. A few days later, he was awarded the first red banner in his brigade. He fastened the banner on the wheelbarrow with which he transported earth every day. It was a thrilling sight to see him pushing his fully-loaded barrow to and fro, at flying speed.

Feng Kuang-ming, a 24-year-old peasant from Hsiangho County, applied to help in the construction of the Huaijou Reservoir the second day of his marriage. He worked tirelessly for all the four months he was there. His wife sent him a pair of new shoes and socks she had made herself, encouraging him to do his best and win the honourable title of "Model Worker" before returning home.

On the construction site one could see titles written on the barrows, carrying poles and spade handles such as: "Rocket Brigade," "Winged Tiger Brigade," "Wu Sung Brigade" (after a legendary hero in the famous novel *Water Margin)*, "Twelve Warriors." The reservoir builders named their shock brigades with titles that could inspire them to greater enthusiasm. There were, in all, 183 such brigades on the building site, apart from the several thousand labour heroes whose outstanding contributions were confirmed by group discussion. The peasants worked with surging energy that baffled description. To finish a shock job within the time-limit set, more than 10,000 peasants from Hsiangho worked in water up to the knees for three days and nights on end. Hou Huai and several other young peasants from Chihsien County would ask their brigade leader to read Ostrovsky's *How the Steel Was Tempered* to them during their breaks, so as to gain constant inspiration.

Though they did not know each other before, the peasants from different co-ops got along as intimately as brothers, and were united as one in their common labour and collective life. For instance, Li Hui-min from Chihsien had kept for days the new shoes and jacket his family sent him, not wanting to wear them until absolutely necessary. But when he heard that his fellow villager, Li Ping, had worn his shoes out, he gave the shoes to him. At first Li Ping firmly declined the offer, but Li Hui-min said seriously: "It all goes to help the reservoir get finished all the sooner."

At night when the reservoir builders were fast asleep, lights still flickered in the houses of the local peasantry: their hostesses were washing and mending clothes for them. This new type of human relationship was vividly described by a peasant in his poem printed in the bulletin of the construction site:

Thousand threads were used
In mending my clothes.
But my grannie's concern for me
Means much more than all this:
I won't go home
Until the reservoir is completed
So as to repay my grannie's kindness.

One day, a peasant named Pei Feng-pao and a brigade leader, Wang Meng-hsiung, were taken seriously ill. Blood transfusions were necessary. To save their lives peasants Liang Yung-chang, Chin Kuo-wen and Chang Lien-yu and site doctor Chu Yung-tai immediately offered their blood; the patients were thus enabled to recover quickly.

Two stories, circulated among the reservoir builders, centred around two similar incidents. They were about a peasant and a student each of whom saved the lives of others at the risk of his own, and set a brilliant example of selflessness and heroism. One day, peasant Tu Chung-chia saw a cart overturn; two big, 400-catty pieces of stone were hanging precariously above the valley in imminent danger of falling. On another occasion, Li Chen-huan, a student of the Peking Civil Engineering School, saw a boulder weighing 300 catties or so rolling down a mountain slope. In each case, Tu and Li rushed and stopped the stones with their bodies and, although injured themselves, they saved those working below from possible injury or death.

A reservoir builder wrote a poem which reads:

All tents are linked with each other,
And we are like members of a big family.

We did not know each other before,
But we are now as intimate as born brothers.

These lines express in a graphic manner the communist relationship of solidarity and mutual concern the 60,000 reservoir builders formed between themselves through common labour and collective life. They also point to the source of their collective strength.

TECHNICAL INNOVATIONS AND NEW RECORDS

In the course of the construction, one individual quoted authorities and cited a lot of examples to prove that the dam could not be finished before the flood season set in unless machines and more workers were added to increase the working efficiency. He held that if the workers could carry daily 20,000 cubic metres of earth to the dam, that would be the maximum possible. After this comrade had left the construction site, however, the 60,000 builders sent the daily quota up and up. Using nothing but their bare hands and the simplest tools, they managed not only to exceed 20,000 cubic metres of earth, but brought it, one month later, to 32,000 cubic metres.

The great change that has taken place in the mentality of the peasants since the achievement of agricultural co-operation and especially the "big leap forward" in agricultural production, and the selfless communist spirit they have cultivated in themselves were felt everywhere in the course of the construction of the Huaijou Reservoir.

Chang Ho, formerly a poor peasant in Sanho County, took off the rear wheel of his much-treasured bicycle and used it in the construction of a big barrow. He joined the shock brigade named after Huang Chi-kuang, a combat hero of the Chinese People's Volunteers in Korea, and maintained a record of carrying 13 cubic metres of earth a day, that is, 430 per cent over the set norm. Five times he had the title of "First-Class Model Worker" conferred on him and, on another occasion, that of "Special-Class Model Worker."

Among the 16,000 peasant workers from Tungchou District outside Peking, Chu Yung-chen was known for his extraordinary strength and working enthusiasm. He had an immense love for labour and his eyes would glow with delight when he was given some work to do. Before coming to the construction site, Chu Yung-chen, who had been a swineherd for a landlord since his childhood, hit upon a new idea and made himself a giant-sized hand cart with an old motor wheel he bought himself. He could transport a cart-load of nearly 1,000 catties of earth over a three-*li* distance 24 times a day.

Shortly after his arrival at the construction site, Hsu Ho-lu, of the young men's shock brigade from Chihsien, found that many of his fellow villagers lagged behind in their efficiency of transporting earth. He discussed this with six of them and they decided to buy some wooden boards and nails with the seven yuan they had saved from the travelling expenses provided by their co-ops, so as to renovate their carts and increase the efficiency. They enlarged the body of their carts and rigged up a movable board in the front part so as to load more earth. This enabled them to create a new individual record of carrying 17 cubic metres of earth a day, or three times the revised quota. Inspired by the selfless spirit of Hsu Ho-lu and his six co-workers, all the peasants from his county launched a drive for reforming their tools. As a result, all the 3,000 carts were altered after the example of Hsu

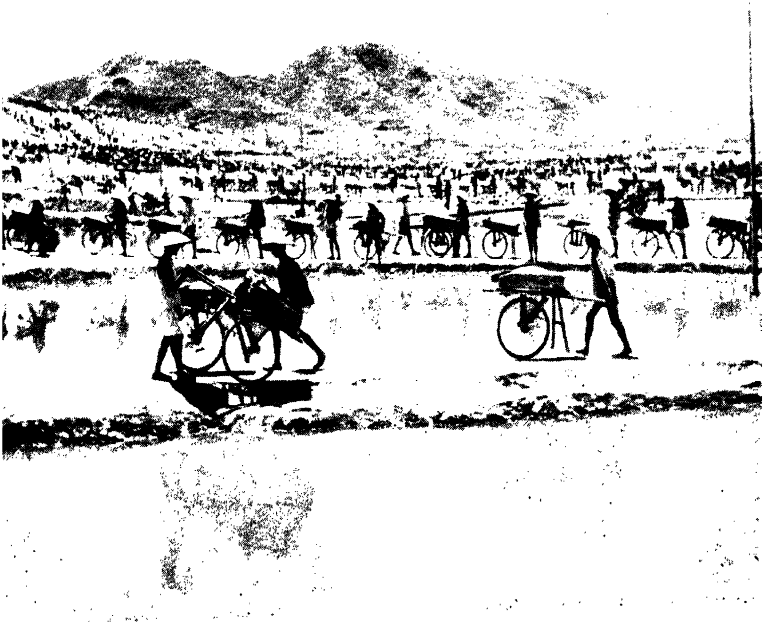
Ho-lu and the six others, and within one month or so the average transport efficiency rose 400 per cent.

Among the peasant builders coming from Huangtu Village in Sanho County, there was one who made it a point to check on the number of carts and tools every evening. If something was missing, he would try his best to recover it so as not to affect the work next day. When it rained, he would go to the construction site one *li* away to see that no tools were abandoned by the reservoir builders when they hurried to take shelter. One might think that this fellow must be a careful leading comrade of one of the county's shock brigades. No, he was only a "hot-water" stoker by the name of Shih Kao-sheng. Shih never failed in his duty to provide the reservoir builders with hot water, carrying it to the site tens of times and covering a total distance of scores of *li* every day, rain or shine. In addition, he volunteered to transport one cubic metre of earth a day, taking advantage of the opportunity when the builders were drinking water. Shih Kao-sheng's keen regard for state property, and his affection for the collective and the reservoir greatly touched the peasant workers, and he was unanimously chosen as a "First-Class Model Worker."

GREAT COLLECTIVE STRENGTH

Though they got no payment from the Huaijou authorities for their work on the construction site, the 60,000 reservoir builders were paid by the 3,000-odd co-ops to which they belonged, taking into account the actual contribution they made to the project during the 100 days of construction. Besides, the co-ops took good care of their

Man conquers nature



Wheelbarrows have displaced the carrying poles families and supplied them with all that was needed for production and livelihood so as to enable them to concentrate their effort on productive work. The 60,000 reservoir builders who volunteered were, therefore, representatives of all the peasants in the 12 counties and districts involved, and the reservoir was, in fact, built by the collective strength of the 3,400 co-ops in question.

The completion of the Huaijou Reservoir is another proof of the great superiority of agricultural co-operation. Today we should sing in praise of all who did their bit in the construction of the project, especially those 60,000 peasants who made the greatest contribution to it. We should hail their brilliant success and the growing communist spirit they displayed.

MURMURING WATER EVERYWHERE

Introducing the "automatic melon-vine" irrigation system of the Hsiangyang Special Administrative Region, Hupeh

Fang Ti and Lo Chung-chang

Anyone visiting the water conservancy projects in the Hsiangyang Special Administrative Region, Hupeh, will be attracted by the "automatic melon-vine" irrigation system built by the local peasants. Irrigation works of this type are regarded as a new creation — a valuable development of water conservancy for mountainous and hilly areas.

The "automatic melon-vine" system is, in short, a network of irrigation projects deriving their water mainly from distant rivers and storing the water when it is not being used. Before building such an irrigation system, overall survey and unified planning are needed. Then the rivers are dammed, section by section, channels built skirting the mountains and connected with a number of ponds and reservoirs so that water is brought to the fields through, in order, those channels, ponds and reservoirs. It is called "automatic melon-vine" because it works on its own and, when made the subject of sketch or plan, looks like a vine (the channels) with many melons (the ponds and reservoirs), the root of the plant being the check dam.

Irrigation systems of the "melon-vine" type can be seen almost everywhere in the Hsiangyang region, and it is still in process of perfection. For instance, 14 channels have been dug along the Kuanshan River in Chunhsien County; they run into many ponds and reservoirs, which, in turn, are connected with the fields by a number of main and small canals, forming a huge network of irrigation projects. And the peasants are digging still more channels, ponds and reservoirs in order to bring benefit to a wider area. In the words of the local people, "spread the vine over the whole county and dot the whole area with melons."

People in all places are deeply interested in this new system of irrigation. Many poems and songs have been written in praise of it. Members of the Spark Agricultural Co-op in Hualishu Township, Chunhsien County, sing:

Reservoirs and ponds
Are knit together with channels;
And paddy fields have appeared
On the erstwhile barren slopes.
River courses are changed,
And dykes built along the banks
So that the centuries-old river flat
Has been turned into fertile land.

One of the poems written by the peasants in Shangshih Township, Suihsien County, reads:

"Melon-vine" is an innovation
That eliminates the age-old menace of drought;
Channels spread everywhere like huge dragons,
And murmuring water is heard
Wherever you go.

The striking feature of the "automatic melon-vine" system is that the rivers and channels are linked, as are the channels and the ponds and reservoirs, so that there is an ever-present water source, and the flow is well regulated and turned to utmost account. In the past, there were many ponds and reservoirs in the Hsiangyang region, but they were all isolated and lacked a reliable source of water; as often as not, the water in them in case of drought dried up only a few days after the fields became parched. This, however, is remedied by the new "melon-vine" system, because the ponds and reservoirs are fed by a constant flow of river water, apart from rain-water stored in the low-lying areas. At the same time, more rain-water can be kept for use, inasmuch as the channels, ponds and reservoirs are linked with each other. This makes it possible for the spare water to be stored for future use, and for the small ponds and reservoirs to play their part.

Another important feature of the "melon-vine" system lies in the fact that it is easy to build in a short space of time, technically simple, and economical. With the exception of a few larger streams, most of the water bodies can be dammed easily and the waters of some of the rivers flowing at a higher elevation can be diverted to the fields merely by cutting a number of channels along their banks, without building any dam at all. Digging channels and small ponds and reservoirs are no complex job. This is especially true of the channels that can be finished in a few days with a small amount of labour, and the water can be led wherever the channels go. Meanwhile, with such an irrigation network, ponds lying idle can be turned to use again with only minor repair. So far as survey and designing are concerned, they are also generally easy except for some larger channels and dams.

All this proves that the "melon-vine" irrigation system can be built according to the principle of "achieving greater, faster, better and more economical results," as can be seen from what the Hsiangyang region did during the winter of 1957 and the spring of 1958. More than 130,000 irrigation works of various sizes were completed during the said period by the five million people in the region. The total length of channels dug reached 130,000 *li,* or more than a dozen times the length of the Yangtse River. A myriad of check dams were built across several hundred small streams and rivers from whose banks a maze of channels lead to the numerous ponds and reservoirs.

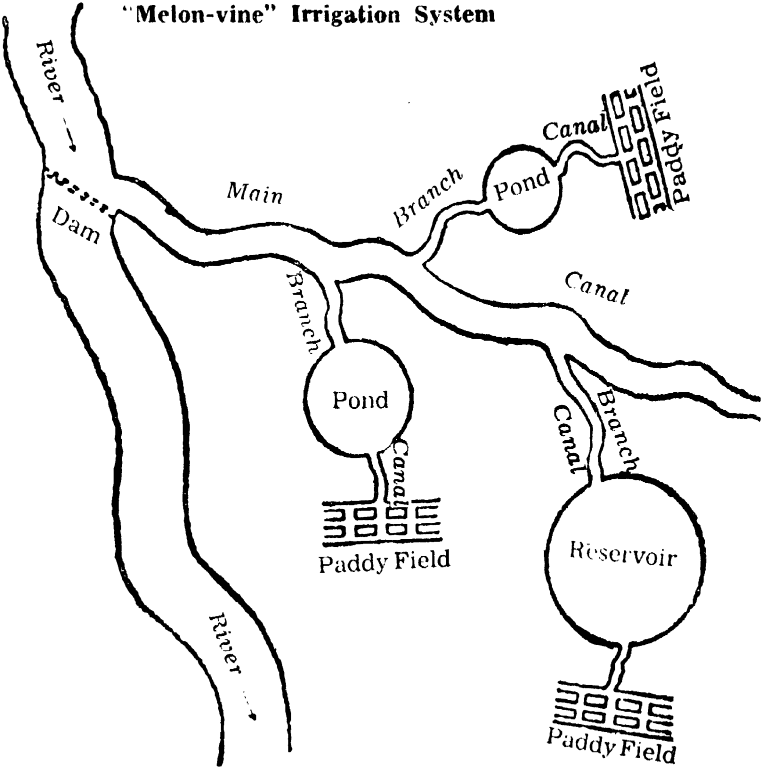
The hard work of the Hsiangyang peasants was amply rewarded. In a matter of months, the paddy fields in their region were expanded from three million to seven million *mou,* and the irrigated dry land increased by 1.6 million *mou.* Only a few months ago, all these newly-added paddy fields and irrigated dry land were still low-yielding fields on the mountain slopes or river flats, or merely tracts of wasteland. In addition to the increase in irrigated area, irrigation has been improved on a total of 2.7 million *mou.*

In terms of both the amount of work done and the benefit derived, between the winter of 1957 and the spring of 1958 a manifold increase was registered over the previous corresponding period, though the investment was one-third less (some works involved only scores of cents or at most several yuan for lighting).

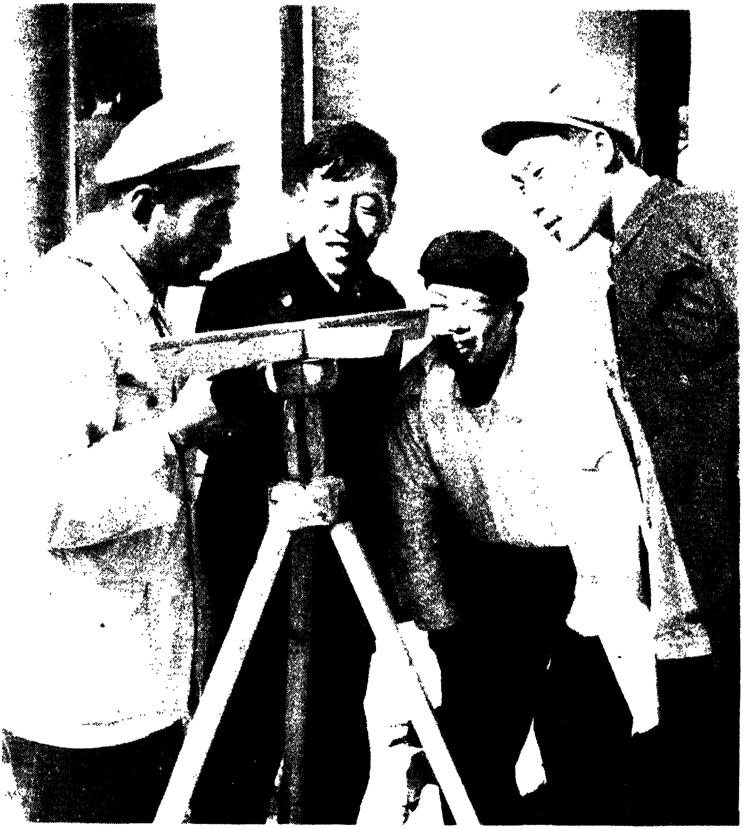
The success of the "melon-vine" irrigation system should be attributed to the wise guidance provided by the leading bodies at various levels in the Hsiangyang region that showed a keen understanding of the mass demand for increased production and of the key measures to achieve the purpose, and led the people to launch an extensive conservancy campaign. At the same time, Hsiangyang owes its success to its effective effort in executing the policy of putting stress on water conservancy works of small size, those built by co-operatives, and those built for the purpose of water storage. Numerous facts have proved that such an innovation as the "melon-vine" irrigation system can succeed only by launching a mass movement; that such a mass movement is possible only when the leadership has grasped the mass demand for increased production and the key measures indispensable for the achievement of the purpose; and only when the leadership is determined to follow a policy that is readily acceptable to the masses.

Hsiangyang is a low-yielding region, the pre-liberation average per-*mou* figure of grain being 200 catties for the region as a whole, and 100 or more for the mountainous areas. Life was difficult for the people in the old society; they lived alternately on grain, bran, vegetables, sweet potatoes and pumpkins. After liberation, grain production climbed up year after year until it reached the average per-*mou* figure of 300 catties in 1957, all thanks to the large-scale production movement led by the Communist Party. But local yield was still low compared with most of the other special administrative regions in the province. This was due, chiefly, to the inadequate area of paddy fields. At the time of liberation, paddy fields accounted for only two million *mou* of 15 million *mou* of arable land. What was more, these two million *mou* were mostly fields whose yield was unstable. Though much work was done to expand the area of paddy fields, it totalled only three million *mou* in 1957.

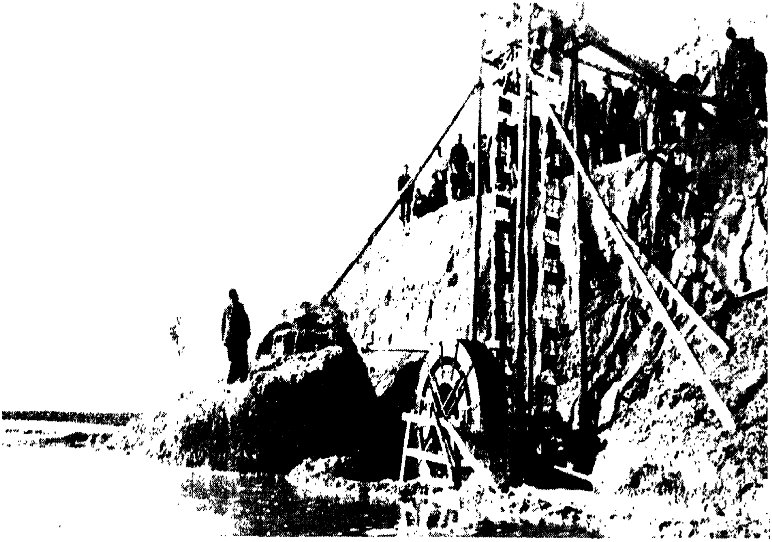
"Melon-vine" Irrigation System



Not a cent was spent on construction of this 10-*li*-long canal



Surveying with the level made by the peasants themselves. It is accurate and cost very little to make



Water-wheel draws water to an upland field

Practice in the past few years has proved that crop yield can be increased 150 per cent or more by turning dry land into paddy fields. "One *mou* of paddy field gives as much as three *mou* of dry land," so the people say. Transforming the dry land into paddy fields — this is the key to increased production. And in order to do this, efforts must be concentrated, first of all, on building water conservancy works.

The leadership in the Hsiangyang region firmly grasped all these decisive factors. It mobilized the masses to launch water conservancy projects on a vast scale; conscientiously carried out the policy of putting stress on water conservancy works of small size, those built by co-operatives, and those built for the purpose of water storage; energetically popularized the experience and innovations of the masses in the implementation of the said policy by organizing visits between the various areas and using the weapon of comparison; and repudiated conservative ideas. Thus the mass campaign for water conservancy began to gather momentum, and the "melon-vine" irrigation system was given shape and publicized all over the Hsiangyang region by summarizing the pioneering experience of the masses.

WINTER SCENE, CHINHSIEN COUNTY

Lin Wei

Water conservancy, as far as I remember, was foreign to the peasants in my native county of Chinhsien, Shansi Province. Practically all the farmland in the locality was dry — except the kitchen gardens, which represented only a tiny portion of the area's cultivated land and were irrigated by water from wells. The fact that water conservancy had never been attempted by the local farmers by no means meant that rainfall was adequate in the area; on the contrary, it was dry nine out of every ten years. In such years, the peasants would go to the nearby Dragon King Temple to pray for rain, tying willow twigs around their heads. But never a single person ever suggested the building of irrigation canals, reservoirs or other irrigation projects, as if these were sheer castles in the air. "Since Heaven has predestined that we work in the dry fields, what can we do otherwise?" is what the local people used to say.

After liberation, I paid a visit to my native place. Some neighbours of mine told me that the water in the locality was "hard" while the soil was "soft," and that the water, if used for irrigation, would destroy the soil.

Chinhsien, although criss-crossed by a maze of gullies, is for the greater part occupied by highlands, and is only sparsely dotted with level ground — a topography which used to tend to a false impression that the area was cut out for anything but irrigation. In the old days people used river water only to feed animals or wash things, never thinking that it could be utilized for other purposes. It was indeed beyond the farthest stretch of my imagination that the area could make any headway in the sphere of water conservancy.

But I had a different story to hear when I visited the place again recently. Many changes had taken place since agricultural co-operation had swept the area. And what I saw and heard combined to wash out the old impressions and leave me with the firm conviction that a bright future is in store for Chinhsien County in the field of water conservancy. I shall begin with the Yingchun Reservoir.

PSYCHOLOGICAL EFFECTS ON LOCAL PEASANTS

To the south-east of my native village, Tuantsun, runs a small river — the Yingchun River. Like other small rivers of Chinhsien its water is muddy. From time immemorial the local people had known that the farmland near the river was resistant to drought, but they had made no attempt whatsoever to irrigate their fields with the river water. In the first half of 1957, with the joint effort of the local farm co-operatives and the guidance of the county's Communist Party committee, a check dam 200 metres in length and 12 metres in height was built, complete with a sluice gate and other flood diversion projects. These were followed by the Yingchun Reservoir, which, situated in the valley lying astride a series of mountains, boasts a water holding capacity of 3,000,000 cubic metres and brings 10,000 *mou* of land under irrigation. The reservoir, built along the Yingchun River, is spoken of as the best of all its counterparts built in Shansi in 1957. It was completed in summer when the county was struck by a serious drought. There had not been a drop of rain for 40 days on end. At their wit's end many aged people in the locality had gone to the Dragon King Temple to pray to the Dragon King for rain. It was at this critical juncture that the sluice gate was opened to let the water stored in the reservoir flow from west to east through a 10-*li*-long trunk canal, thus saving nearby fields belonging to a dozen co-ops from imminent disaster. The crops, with their luxuriant leaves, big stalks and full ears resulting from adequate irrigation, bore out that there was little or no difference between the water and soil conditions of Chinhsien and those of the other parts in the province. The argument that the "hard" water in the locality, when used for irrigation, would destroy the "soft" fields, had lost its age-old superstitious power over the local people. Facts had opened their eyes to the truth that the small rivers, which they had hitherto looked upon as useless, could be turned to good account and that, once check dams and irrigation canals were constructed, the thirsty and parched farmland "predestined by Heaven" could also be brought under irrigation.

It is no exaggeration to say that the psychological effects produced by the reservoir on the 120,000 peasants of Chinhsien are far greater than its economic value. On the stone sluice gate is an inscription carved in bold Chinese characters: "Man can certainly conquer nature!" — an inscription which tells passers-by of the local farmers' victory over nature, and signifies that the day has come when the peasants have their destiny at their beck and call. This engraving is coupled with a poem by a local scholar called Wei Ying which reads in part:

> In days gone by
> The Yingchun River had us at its mercy.
> But not now!
> Since ancient times
> It has been *man* not Heaven,
> Who disposes.

The county's Communist Party committee told me that in pre-liberation days Chinhsien had only about 1,800 *mou* of irrigated land. Although the situation took a turn for the better after liberation, the figure was still negligible in 1955 — about 5,000 *mou,* which accounted for only 1 per cent of the county's total farmland of 500,000 *mou.* Two years after the local peasants turned to co-operative farming, the figure rose to 36,000 *mou* which, small as it was, was already 19 times more than pre-liberation days and 6 times greater than before co-operation.

BLOCKING THE CHANGHO RIVER

However, this is only the beginning of a great project. The water conservancy plan of the county during the Second Five-Year Plan period is still more ambitious. It is embodied in the heroic slogan: "Block the Changho River from flowing out of Chinhsien" which is now the talk of the whole county. Nor is it merely a slogan — its realization is guaranteed by practical measures examined and approved by experts. There are throughout the county 5 big rivers, 214 small streams and 72 springs all of which empty themselves into the turbid Changho

River. In the light of this geographical feature the water conservancy plan of the county is to cut off first the Changho River from its tributaries and then dam its source in north Chinhsien. Groups of reservoirs and a network of irrigation canals — "clusters of grapes" and "spider webs" as the county Party committee calls them respectively — will be built in addition to a series of wells which are to derive river water through the channels. Included in the plan are some 200 reservoirs, 1,200 main and branch canals, 160 projects for irrigating upland fields, and about 1,600 big irrigation wells. This seems too colossal a plan for a county like Chinhsien. However, it will cost very little, as all but the bigger projects will be undertaken by the farmers themselves. When these projects are completed, the irrigated land of the area will rise to 220,000 *mou* or more. The river-beds unaffected by the projects, which cover tens of thousands of *mou*, will be reclaimed for paddy-rice. In addition, more small-scale hydro-electric stations will be constructed and, to increase the income of the peasants, fish and ducks will be raised in the reservoirs, which will be planted with trees in the not distant future. The day is in sight when Chinhsien, formerly poverty-stricken and frequently visited by drought, will free itself from the damages of drought and flood and become a land of plenty. When that time comes, Chinhsien's peasants will, once for all, have cast overboard the belief that their "fate" is predestined by Heaven.

Prior to the advent of agricultural co-operation, a plan like this would have been considered sheer day-dreaming. However, after co-operation, especially after the completion of the Yingchun Reservoir in 1957, people now take it for granted. "Since we can make the Yingchun River bow to our will," they said, "why can't we do the same with the others?" "Since we can sever the Changho River from its tributaries, why can't we deal with its source, which is no more than the size of other rivers?"

NIGHT FOR DAY

In early December 1957, when I came to the area, a new reservoir was under construction on the Kelu River near Fantsun Village, some dozen *li* to the south of the county town which, when completed, would add 20,000 *mou* to the county's irrigated land. The work involved in the construction of this reservoir was five times as much as the Yingchun Reservoir. When I set foot on the construction site, the peasants working were busy dredging the river near the main dam, in preparation for the building of a stone wall to hold back the water. Two water pumps were humming away, raising a steady stream. Many of the peasants were chatting while working, completely unmindful of the knee-deep water. After nightfall, the generator started and the site was thrown into a sheet of light. Some people were warming their ice-crusted spades, picks and baskets at the furnaces attached to the donkey engine. The moment they were through they plunged into work again. They thought nothing of the piercing wind, obsessed as they were with the determination to finish the project with the least loss of time. Their slogan was: "Night for day, electric light for the sun. Work nonstop, rain or snow!"

A main canal, a dozen *li* long, was being cut to the north and south of the reservoir. Here, also were thousands of peasants hard at work, levelling outcrops and filling in gullies, with the aim of bending the unfavourable topography, "given to us by nature" as their ancestors called it, to their own will. They had challenged the bulldozer operators — who had come from the county town to lend them a helping hand — to a friendly competition.

Practically all of Chinhsien's peasants were caught up in the vortex of this movement for water conservancy.

I made many visits to friends and relatives in villages on the western outskirts of the city. I knew every inch of this area. Here, in the old days very few people were to be seen in winter, as most of them had gone either to the western hills for firewood or to the neighbouring counties of Hsiangyuan and Chinyuan for coal, so as to tide over the winter and get fuel for the first three seasons of the coming year. Now only a handful of them engaged in fuel-gathering, the rest, men and women, young and old, worked on water conservancy projects of various sizes. Here and there one could see them ramming earth, while chanting "Hei-ho" to keep their movements in perfect unison. Turned 60 this year, the old scholar, Wei Ying, also took his place on the earth-carrying job with young people. When night fell, barn lanterns were burned while people were bustling with activities in the hope of finishing as many projects as possible before the earth froze.

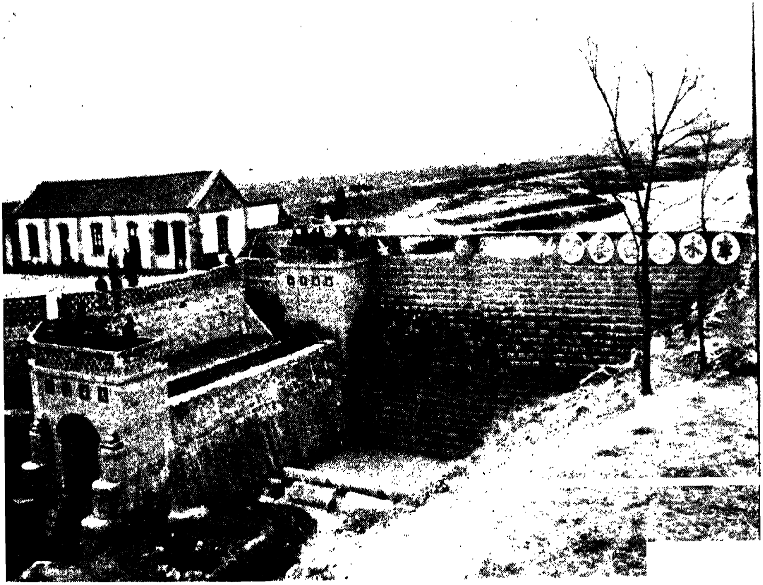
The fields and the villages were as bright as day. The seven villages under Tuantsun Township were all stirred to action. The peasants of Jensheng Village were digging a canal near the Yingchun Reservoir; those of Tungpo Village were working on several projects for watering upland fields; Tuantsun Village was going all out to build a small reservoir to its north; Yuanwang and Shangwan villages were joining hands in cutting another canal; the people of the small villages half-way up the western hill were building a dam and a series of projects for water and soil conservation. A group of peasants were digging a spring source from under a big outcrop of rock on the high mountain several *li* to the west of Tuantsun Township. They were hoping to widen the area of the source, and increase its flow. When the winter projects were completed, another 2,800 *mou* would become irrigated land — counting out those to be watered by this spring source — which would be one-fifth of the township's cultivated area. But this was not a big figure. Yangchuang Township, in the north, was building two reservoirs and a number of irrigation ditches with the aim of bringing one-fourth of its land under irrigation. Kuotsun Township, in the south, was working on a series of projects to bring water to 7,000 *mou,* that is, one-third of its cultivated land of 20,000 *mou.* Nanchen Township, to the east of the Yingchun Reservoir, after bringing 7,000 *mou* under irrigation in 1957, was striving for another 4,000 *mou* so that half of its cultivated land would become irrigated fields.

The county's irrigation plan for 1958 was originally set at 54,000 *mou.* But the combined figure of the plans of the various townships has already reached 76,000 *mou* (excluding 80,000 *mou* to be irrigated by flood water). Add to the existing irrigated land and the total area under irrigation will amount to 112,000 *mou* instead of 90,000 *mou* as originally planned, averaging one *mou* for each person. Once the masses are stirred to action for a task on a voluntary basis, the force and the speed in accomplishing it is really unbelievable!

The day before I left Chinhsien the Changchih Special Administrative Region had approved the county's plan for constructing the two reservoirs on the Hsuyang and Paiyu rivers ahead of its time-table. When completed these two badly needed reservoirs will each irrigate some 10,000 *mou* of land. By the end of 1958 the total irrigated land of Chinhsien may well reach 144,000 *mou*, a figure which would have passed belief in the old days!

Now the plan to crystallize the heroic slogan, "Block the Changho River from flowing out of Chinhsien," has been put on the agenda for 1959. The Changho River, which had inspired boundless fear and worry in the local peasants in pre-liberation days, will be turned into an asset fully at their disposal in the not too distant future.

Surveying the terrain



Yingchun Reservoir brings 10,000 *mou* of land under irrigation

ON THE CONSTRUCTION SITE OF THE TAIHANGTI RESERVOIR

Wang Chien-lin and Lin Lin

Straddling the border between Shantung and Kiangsu provinces is a famous lake called Weishan. It is now accompanied by the new Taihangti Reservoir in Hotse Special Administrative Region to the west, just near Honan Province. The reservoir, covering an area of 250 square kilometres and with a water-holding capacity of 950,000,000 cubic metres, is divided into seven parts by six dykes, giving it the shape of a recumbent ladder. Such a huge project would usually need three years for surveying and designing, and hundreds of millions of yuan to build. Yet, while it was designed at the latter part of March 1958 and actual construction started at the beginning of April, its earthwork has already been completed. As the construction was undertaken by the people with state aid, the government invested only ten million yuan. The main canal, jointly undertaken by Shantung and Honan, has also started functioning.

Not long ago we paid a visit to the construction site of the reservoir. No sooner had we left Tsaohsien County behind than we saw an endless stream of lorries laden with goods running along the road. The area to the north of the main dyke and the villages in its vicinity were dotted with a sea of shacks made of rush mats. One of the shacks bore an inscription which read:

> Let's store up the water from the sky,
> And dig out springs from underground.
> We are heroic fighters
> In the fight against nature.

The 160-*li*-long main dyke was a hive of activity where a big army of workers from eight neighbouring counties — 300,000 strong — were engaged in constructive labour, carrying, levelling, and ramming the earth. The students of the Tsinan Water Conservancy School also had their hands full, continually checking on the tamped earth along with peasant technicians. There was an endless flow of people coming and going between the dyke and the pond.

The dyke, made of earth, boasts an earthwork of 41,310,000 cubic metres. It is 80 metres wide at the base and 7 metres wide at the top, with an appropriate slope against the action of waves. Less than two months after the construction started, nine small red banners were raised on the "winners' board" erected on the work site of Tushanchi Township of Tsaohsien County. These banners were awarded to the Shengli Agricultural Producers' Co-operative for being the first among the county's various co-operatives to complete its quota. We had an interview with Hu Chen-tien, a solidly-built young man of 28, leader of the co-op's work team on the construction site. Hu Chen-tien is a Communist. Pinned to the lapel of his coat was a badge of honour bearing the inscription: "Young Shock Worker in Harnessing the Wanfu River." The year before, when the Wanfu River project was in full blast, he had led 35 members of his team in fulfilling an assignment 25 days ahead of time. After that, they spent 25 days in helping another team.

This time, Hu again emerged victorious in the race with time, being the first to fulfil the fixed quota. The "Rocket" Youth Shock Brigade of 39 members, formed by him, transported (by wheelbarrow) a daily average of 14.5 cubic metres of earth for each person, over a distance of 190 metres.

The co-op had another team named after Chao Yun, a valiant general in the *Romance of the Three Kingdoms.* It was formed by the middle-aged members of the co-op and was headed by Li Meng-lan. The two teams challenged each other to be the most advanced. The first day, the "Rocket" Brigade transported 140 barrow-loads of earth each person while the Chao Yun Team did 142 barrow-loads; the second day, the former won by a score of 148 to 147; the third day, the competition ended in a draw. They had worked for three days and two nights on end prior to the completion of the project in their charge. Hu Chen-tien, stripped to the waist, took the lead in the earth-carrying job, while Shih Chih-chiang, a member of his shock brigade, operated single-handed two wheelbarrows with a total load of some 900 catties. Fearing they might break down, Ko Li-tao, leader of the co-op's work contingent, again and again urged the members to rest, but to no avail. At his wit's end he too joined them in carrying earth. The moment the project was finished they hastened to help the members of other co-ops.

Many stone rammers were decked with the slogan "quality first." Everyone on the construction site could tell why so much importance was attached to quality.

While tamping, people acted strictly in accordance with what was required for correct work. On the site of Kaochuangchi Township of Tsaohsien County, members of Kuo Chin-chung's tamping team raised the tamping-stone high above their heads, acting up to the required standard of height, speed and density of the earth. The township led the whole county in quality and had on many occasions won the banner of honour. The tamping team of Tushan Township, Chuyeh County, headed by Hsieh Chun-yin, registered a record of pounding the earth 44 times in one minute, while on many occasions, over a period of hours they did 1,250 rounds on end. When we called on him, Hsieh Chun-yin, showing us his robust arms, told us that once when they went in for a spell of shock work, his right arm operating the tamper got badly swollen because of the strenuous movements. Later, we learned from a technician that a dyke one metre in length and 6.8 metres in height called for 70,075 poundings.

We spent two nights on the construction site. One night, at ten o'clock, we saw the bright light of a pressure lamp on the dyke, where the workers of two co-ops of Sunlaochia Township of Tsaohsien County were ramming earth. At eleven they returned to their living quarters. At four o'clock the following morning we got up and hurried to the working place of the two co-ops, only to find the peasant workers had got there in advance of us. It was dawn. A nest of stars still glittered in the sky.

When night fell, the work site of Chuyeh County blazed with light (electricity was produced by generators operated by tractors) as if it was a fair-sized city. Although we were far from the site, we could hear a medley of dins — whistles, human voices, the beating of drums and gongs, the humming of tractors and music relayed from the loudspeakers. Thousands of peasant workers from three townships were working furiously on the flood-lit site. Shouting the slogans such as: "Make a big leap forward!" and "Run like a tiger leaping down a hill!" they pushed their wheelbarrows at the double, and tore down the dozen-metre-long slope of the dyke — very much like the pace of "a tiger leaping down a hill!"

The enthusiasm of the masses in building the reservoir could also be seen from the fact that more and more people were coming forward for a spell of voluntary work. Take Yuncheng County for instance! As it is situated north of the Hotse region, it will not be benefited by the reservoir. However, when they heard that a reservoir was to be built at Taihangti, the local peasants packed their things and came forward in their thousands to help.

Sixty-four-year-old Li Yun-tai also applied to join. While in general three were in charge of loading earth for four wheelbarrows, he alone was in charge of loading for two. When we saw him he told us: "In the old days I had seen a treasury for storing money and a barn for storing grain, but I had never seen a reservoir for storing water. Recently I had an opportunity of seeing one. It's a good idea. It can hold the water when the rains come and water the land when it is dry. When this reservoir is completed, we can eat locally grown rice as people do south of the Yangtse!"

At the working place of Liukuantun Township of this county were two young returned armymen, Chu Yun-shui and Wang Hsueh-yu. They had applied to join their townsfolk right after they came home at the expiration of their service.

The reservoir builders loved labour as much as recreation. We saw a series of performances given by Chen Kuang-hsien, a folk musician from Liukuantun Township. He was really a versatile man, capable of playing a dozen wind and percussion instruments. He worked as a cook in the canteen. When the bell rang for a break, he would go to the work site to perform for the builders. We attended also an evening party on the work site of Changfeng Township of Chuyeh County at which many splendid performances were given.

Once, as we were strolling eastward along the dyke, the high-pitched, long-drawn strains of a tamping song came drifting to our ears. We turned in the direction from which the song came. It was the members of the tamping team of Wangluchi Township of Tsaohsien County. Led by Wang Tung-liang, the team leader, they were singing to the rise and fall of the disk:

Round after round,
We pound the earth, smooth and shiny.
Speed up the work, comrades —
One day for two days!
With two months of hard work
We shall bring water to all our land.

The supply of equipment, foodstuffs and coal played an important role in the construction of such a huge project. The convoy of lorries — 293 in all — from the People's Liberation Army and the transport companies of Tsingtao and other cities did a splendid job in this regard. By July 4 they had brought to the construction site some 100,000 tons of supplies. The drivers of the 100 lorries from the army distinguished themselves in efficiency. On arriving at their destination they volunteered to help unload the goods. The drivers of the six lorries of a transport company from Tsingtao, despite the unfamiliar road, went a whole night without sleep transporting steel bars from Lankao County, Honan, to the construction site.

The Hotse region, made up of plains, is blessed with fertile soil. In the past, as it was frequently visited by drought and flood, its crop yield was very low — 200 catties a *mou* on the average. In 1957, nine million *mou* of its farmland registered a decline of yield of varying degrees due to a drought and flood. Now with the birth of the reservoir all that is needed is to open the six sluice gates to let the endless stream of clear water flow to the eight million *mou* of farmland in Tsaohsien, Tingtao, Chengwu, Chuyeh, Hotse and Tanhsien. The reservoir, together with other relevant projects, will rid the area of ordinary flood menace. It is estimated that the improvement of water conservancy conditions alone will add 2,500 million to 3,000 million catties to the area's annual grain output. In the not distant future, large numbers of fish and ducks will be seen swimming in the blue rippling waters of this artificial lake, along which a series of hydro-electric power stations will be built. The Hotse region, formerly low-yielding, will then become a land of plenty with golden cascades of wheat and balmy with the fragrance of rice!

中国农田水利大跃进
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